

ARMED FORCES EPIDEMIOLOGICAL BOARD

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SUBMARINE FORCE MUSEUM
GROTON, CONNECTICUT

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TUESDAY, SEPTEMBER 16, 2003

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DESIGNATED FEDERAL OFFICIAL :

MS. ELLEN P. EMBREY
Deputy Assistant Secretary of Defense
for Health Force Protection and Readiness
Office of the Assistant Secretary of Defense
for Health Affairs

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P R O C E E D I N G S

(8:05 a.m.)

1
2
3 DR. OSTROFF: Let me start by, as
4 always, welcoming everybody and thanking our
5 gracious host for being willing to accommodate
6 us. We'll start out by introducing Ms. Ellen
7 Embrey, who is the Deputy Assistant Secretary of
8 Defense for Health Force Protection and
9 Readiness, and I'll let her call the meeting to
10 order.

11 MS. EMBREY: Thank you, Dr. Ostroff.
12 As the Designated Federal official for the Armed
13 Forces Epidemiological Board, a Federal Advisory
14 Committee to the Secretary of Defense, which
15 serves as a continuing scientific advisory body
16 to the Assistant Secretary of Defense for Health
17 Affairs, my boss, and the Surgeons General of the
18 Military Department, I hereby call the Fall 2003
19 meeting to order.

20 Capt. Higgins, thank you very much for
21 your gracious "hostness" for this meeting and for
22 the support you've given us to allow this meeting
23 to occur here. Thank you. Dr. Ostroff?

24 DR. OSTROFF: Thanks very much. Why
25 don't we start by going around the table and

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1 around the room and having everyone introduce
2 themselves. Once again, we are, for the second
3 time this year, meteorologically challenged.

4 (Laughter.)

5 For those of you who recall the
6 meeting in Albuquerque, that one was due to snow,
7 and this one looks like it's going to be due
8 possibly to rain and wind, and so there are
9 several Board members who are supposed to be
10 attending this meeting that at the last minute
11 weren't able to come. But I would like to start
12 by going around the table and having everyone
13 introduce themselves. Why don't we start over
14 here on the right.

15 CDR. McMILLAN: David McMillan,
16 Preventive Medicine Officer, Headquarters, Marine
17 Corps.

18 LtCOL. JONES: Dave Jones, Preventive
19 Medicine Staff Officer at the Joint Staff.

20 CAPT. KILBANE: Ed Kilbane, Director
21 of Preventive Medicine and Occupational Health at
22 BUMED.

23 CDR. LUDWIG: Sharon Ludwig,
24 Preventive Medicine Staff Officer at
25 Headquarters, Coast Guard.

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1 DR. BROWN: I'm Mark Brown. I'm
2 representing Department of Veterans Affairs here
3 today.

4 DR. LAUDER: Tamara Lauder, Physical
5 Medicine Rehabilitation.

6 DR. GRAY: Greg Gray, Epidemiology at
7 University of Iowa.

8 DR. LEMASTERS: Grace Lemasters,
9 Epidemiologist, University of Cincinnati.

10 DR. POLAND: Greg Poland, Mayo Clinic,
11 Rochester, Minnesota.

12 DR. ATKINS: David Atkins, Agency for
13 Health Care Research and Quality, Rockville,
14 Maryland.

15 CDR. HORN: Wayne Horn, head of
16 Submarine Survival Systems, Submarine Medical
17 Research Lab.

18 CAPT. HIGGINS: G.A. Higgins,
19 Commanding Officer of Naval Submarine Medical
20 Research Laboratory, Groton, Connecticut.

21 MS. EMBREY: Ellen Embrey, you heard
22 before.

23 DR. OSTROFF: I'm Steve Ostroff, I'm
24 the Deputy Director of the National Center for
25 Infectious Diseases at the CDC.

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1 COL. RIDDLE: Rick Riddle, Executive
2 Secretary for the Armed Forces Epidemiological
3 Board.

4 DR. MALMUD: Leon Malmud, a nuclear
5 physician and Dean Emeritus, Temple University
6 School of Medicine.

7 DR. CAMPBELL: Ted Campbell, North
8 Carolina Division of Public Health.

9 DR. CATTANI: Jackie Cattani, College
10 of Public Health at the University of South
11 Florida.

12 DR. CLINE: Barney Cline, Professor
13 Emeritus, Tulane University.

14 DR. FORSTER: Jean Forster, School of
15 Public Health, University of Minnesota.

16 DR. HAYWOOD: Julian Haywood,
17 cardiologist, University of Southern California.

18 LtCOL. PHILLIPS: Steve Phillips,
19 Deployment Medicine Staff Officer, Force Health
20 Protection and Readiness at Health Affairs.

21 DR. ZAMORSKI: Mark Zamorski,
22 representing the Deployment Health Office of the
23 Canadian Forces.

24 COL. WOODWARD: Kelly Woodward, Chief
25 of Operational Prevention, Air Force

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1 Headquarters.

2 COL. UNDERWOOD: Paula Underwood,
3 Preventive Medicine Staff Officer, Army Surgeon
4 General's Office.

5 DR. OSTROFF: Why don't we go around
6 the back as well.

7 CAPT. EMERSON: Maura Emerson, Force
8 Medical Officer, Military Sealift Command.

9 COL. BRADSHAW: Dana Bradshaw, General
10 Preventive Medicine Residence Program at the
11 Uniformed Services University.

12 COL. WITHERS: Ben Withers, former
13 member of the Board, now with the Army Inspector
14 General's Office.

15 COL. KRAUSS: Margot Krauss, Acting
16 Director of the Division of Preventive Medicine.

17 COL. HOFFMAN: Ken Hoffman, Medical
18 Director, MHS Population Health Programs at TMA.

19 COL. GARDNER: John Gardner,
20 Population Medicine at Deployment Health Support
21 Division.

22 LtCOL. HARTZELL: Mike Hartzell, TMA
23 Staff Officer, Health Programs Analysis and
24 Evaluation.

25 COL. COX: Kenneth Cox, Air Force

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1 Epidemiology Services at the Air Force Institute
2 for Operational Health.

3 CDR. CULPEPPER: Randy Culpepper,
4 Director of Overseas Operations at GODGEIS,
5 Silver Spring.

6 DR. OSTROFF: Thanks very much. Let
7 me start by welcoming Dr. Mark Brown. This is
8 the first time that we've had a formal liaison
9 representative from the VA system, and the
10 President's Task Force to Improve Health Care
11 Delivery for the veterans of our nation's
12 recommended in its 2003 report that the DOD and
13 the Veterans Affairs expand their collaboration,
14 which I think makes a lot of sense. One of the
15 specific recommendations was that the Department
16 should add an Ex Officio member from the VA to
17 the Board, and Dr. Brown has been asked to fill
18 this role, and we certainly welcome you and look
19 forward to your input and also to your
20 participation.

21 DR. BROWN: Thanks, I appreciate that.
22 I'm glad to be here. Col. Riddle promised me a
23 submarine ride as the inducement.

24 DR. OSTROFF: Well, we may have to
25 hijack that submarine and ride it back to

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1 Washington, some people might not get there
2 otherwise.

3 (Laughter.)

4 I'd also like to thank Capt. Higgins
5 and Cdr. Horn of the Naval Submarine Medical
6 Research Laboratory, and also in anticipation of
7 tomorrow, Capt. Korale of the Coast Guard
8 Academy, for hosting us. I think we've talked
9 about this before. The Board has never actually
10 visited or met at a Coast Guard facility, so this
11 will be another first for the Board, and we're
12 very appreciative of their willingness to host
13 the AFEB and the folks here at the Submarine
14 Force Museum for allowing us to use their
15 facilities. It looks like it's really a
16 beautiful facility.

17 And, with that, I'll turn it over to
18 Col. Riddle to give the particulars. The only
19 thing that I've been asked to mention before we
20 get started is that over the course of the day as
21 you make comments, that everyone needs to speak
22 into the microphone because the meeting is being
23 recorded, and before you make a statement please
24 add your name so that the transcriber will be
25 able to properly be able to attribute your

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1 comments.

2 COL. RIDDLE: Well, good morning and
3 welcome. I, too, want to echo those words of
4 appreciation for Cdr. Wayne Horn and Capt. Mike
5 Korale who will be here later on this afternoon
6 and we'll see tomorrow when we go over to the
7 Coast Guard Academy.

8 The arrangements for this meeting have
9 been the easiest, I believe, that I've made. The
10 staff here of NSMRL have been unbelievably
11 supportive and helpful in pulling this meeting
12 off. I've got to get in better with the
13 weatherman, that's the only thing I can say.

14 So, for February, the Air Force is
15 going to host us, and I've sent a few preparatory
16 e-mails out. It looks like we're going to be 17
17 and 18 February down at Hurlburt Field with Air
18 Force Special Operations Command, and Col. Tim
19 Woodruff is going to take care of us down there
20 and it looks like we're already working on a very
21 good program and a tour of the AFSOC weapons
22 systems and capabilities at Hurlburt Field, and
23 that's at Fort Walton Beach, Florida. More to
24 come on that, and we'll get our information out
25 for everybody.

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1 Refreshments available this morning
2 will refresh. We're going to have a catered
3 lunch here this afternoon for all the Board
4 members, speakers, Preventive Medicine Officers.

5 And then this afternoon we will do a submarine
6 tour for the Board members and then we'll take a
7 break, and the other folks that are here, they
8 have the Nautilus outside and the museum, which
9 is just a superb facility and will give a good
10 overview of submarine medicine for those folks.
11 And then this evening we'll be back here for the
12 Executive Session.

13 For telephone, copies, fax, messages,
14 please see Ms. Severine Bennett or Ms. Karen
15 Bralley at each of the doors here, for anything
16 that you may need, or any help or assistance
17 while you are here at New London.

18 Most of the slides are up on the
19 Website now, the transcripts will be up in a
20 couple of weeks for anybody to refer back to in
21 your notes as we work through the issues before
22 the Board.

23 Again, thanks for the hard work of
24 Karen and Severine and support of the Uniformed
25 Services University of the Health Sciences, we

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1 are able to offer 10.25 CME credits for this
2 meeting. To receive the credits, you'll need to
3 sign the attendance roster out on the table where
4 the handouts are. Severine has got it over there
5 at the door. And then there's an evaluation form
6 in your notebooks or out on the table, and when
7 you complete that evaluation form and turn it in
8 tomorrow, they will have the certificate for you
9 for the CME credits.

10 Tonight we've got dinner at the S&P
11 Oyster House, and we scoped it out yesterday
12 afternoon and it looked like a great place to
13 eat. We've made reservations tentatively for 20,
14 but we need to have an accurate count to them as
15 early as we can. It's open to everybody here in
16 attendance -- the Board members, Preventive
17 Medicine Officers and attendees. So, if we could
18 this morning just get a hand count of those who
19 are going to be attending dinner with us tonight.

20 (Show of hands.)

21 And what we'll do is we'll leave from
22 the Susse Chalet, which is the same thing as the
23 Groton Chalet, around 7:00 o'clock tonight. Once
24 we get done with the Executive Session, we'll
25 ease back over there, try to meet down in the

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1 lobby at 7:00, and our reservations are for 7:45.

2 And back over to you, sir.

3 DR. OSTROFF: Great. As is tradition
4 with the Board, we give out the plaques and the
5 recognitions at the beginning of the meeting in
6 anticipation of having a great meeting, and I
7 guess Chief Sering is not here right now but,
8 Cdr. Horn, if you wouldn't mind accompanying me
9 to the podium.

10 We really would like to express our
11 appreciation for your willingness to be able to
12 host this meeting of the AFEB. For all of the
13 Board members, those of us that are civilians and
14 those of us that are semi-civilians, I guess you
15 would say, it is really important for us to visit
16 a variety of different military settings, and I
17 think speaking for all of the Board members, many
18 of us have been very eager to visit a submarine
19 facility. As I mentioned earlier, it's one of
20 the areas that I think that we know very little
21 about and are very anxious to hear about.

22 So, for your willingness to host us
23 and accommodate us and educate us, we certainly
24 would like to express our appreciation, and we
25 have a plaque for you and a certificate -- and it

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1 says from my notes that we also have a coin from
2 Dr. Winkenwerder's office --

3 CDR. HORN: You have to buy the
4 drinks, though.

5 (Laughter.)

6 (Whereupon, the plaque and certificate
7 were presented to Cdr. Horn.)

8 DR. OSTROFF: Thank you so much.

9 (Applause.)

10 COL. RIDDLE: We've got the Senior
11 Chief.

12 DR. OSTROFF: Chief? And we'd like to
13 very much thank you for the excellent support
14 that you've given us here, and you will give us
15 here, I'm sure, and for that we would like to
16 present you with a certificate.

17 COL. RIDDLE: Senior was here last
18 time until 5:00 o'clock and all day yesterday --
19 9:00 o'clock, so he made an effort for us.

20 DR. OSTROFF: Great.

21 (Applause.)

22 And I think our first presentation of
23 the morning will be from Capt. Higgins.

24 CAPT. HIGGINS: Thank you very much.

25 Good morning, Honorable Ms. Embrey, Deputy

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1 Assistant Secretary of Defense for Force Health
2 Protection and Readiness; to Adm. Ostroff,
3 President, Armed Forces Epidemiological Board;
4 Col. Riddle, United States Air Force, the
5 Executive Secretary of the Armed Forces
6 Epidemiological Board, distinguished Board
7 members and representatives, and esteemed guests
8 of the Armed Forces and academia. Welcome to the
9 Naval Submarine Base, New London, Connecticut,
10 and the Armed Forces Epidemiological Board
11 meeting, Fall 2003.

12 My name is Capt. Gary Higgins, and I'm
13 the Commanding Officer, Naval Submarine Medical
14 Research Laboratory in Groton, Connecticut.
15 Welcome to the calm before the storm.

16 To give you an update, as of 7:10 this
17 morning, Hurricane Isabel is expected to make
18 landfall on Thursday, and it is currently 660
19 miles south by southeast of Cape Hatteras, North
20 Carolina, and has been downgraded to Category 3.

21 Landfall is projected to be over North Carolina,
22 Delaware, Maryland Peninsula and New Jersey.

23 As members of the Armed Forces, we are
24 always in a state of a calm before the storm.
25 Our forces engage globally, deployed into harm's

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1 way, working to restore peace to nations
2 shattered by terrorism and torn by political
3 injustices.

4 As members of the Armed Forces medical
5 profession, we constantly seek to prepare our
6 forces to meet those global challenges with
7 healthy and fit warriors, preparing and training
8 those who will render treatment and care in the
9 field of battle, and to provide rapid
10 stabilization and evacuation for treatment.

11 The Navy Submarine Forces are no
12 different. Our battle space is three-dimensional
13 liquid. Our missions are to provide forward
14 deployed focused support to engage the enemy
15 directly with subsurface and surface weapons
16 delivery, to conduct covert surveillance, to
17 discreetly deploy special operations forces and
18 recover them at sea, and support the third triad
19 of the sea/air/land nuclear deterrents. In each
20 of these mission areas, we operate in near or
21 total silence, hence the term "the silent
22 service".

23 Our ability for sustained operations
24 in secrecy is a function of two elements,
25 equipment and crew. It is impossible to perform

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1 our mission without the seamless integration of
2 these two elements, the man and machine
3 interface. It is the responsibility of the Naval
4 Submarine Medical Research Laboratory to ensure
5 our sailors are prepared.

6 Again, welcome to Groton, Connecticut,
7 and to the calm before the storm. Thank you for
8 your attendance at this meeting and your visit to
9 the Naval Submarine Base, New London,
10 Connecticut. It is home to three submarine
11 squadrons and the Commander, Northeast Region.
12 So, on behalf of Adm. Walsh, I too welcome you to
13 Groton, Connecticut. Thank you very much.

14 (Applause.)

15 DR. OSTROFF: Capt. Higgins, we also
16 have a commemorative plaque for you, and as
17 opposed to going up to the other side of the
18 room, I'll present it here.

19 CAPT. HIGGINS: Thank you very much,
20 Admiral, I appreciate it.

21 DR. OSTROFF: Our first speaker of the
22 morning is Cdr. Wayne Horn, who is going to
23 provide an overview of the Submarine Medical
24 Research Program and Health Surveillance among
25 submariners. Cdr. Horn's slides are in Tab 2 of

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1 the notebooks. Take it away, Commander.

2 CDR. HORN: Good morning. As Capt.
3 Higgins mentioned, the Submarine Force is
4 commonly referred to as the "Silent Service". A
5 lot of the work we do is classified, and we have
6 a general attitude of not attracting attention to
7 the work and the missions that we perform.

8 (Slide)

9 What I'd like to do is cover in the
10 next few slides the U.S. Navy Submarine Force,
11 the history and development of the modern
12 submarine, talk a little bit about submarine
13 operations and the unique submarine environment,
14 discuss how we deliver medical care onboard
15 submarines and some of the problems the submarine
16 environment generates, talk about submarine
17 medicine R&D, and also discuss a little bit about
18 our health surveillance issues.

19 (Slide)

20 For those of you who are unfamiliar
21 with the submarine service, submarines in the
22 U.S. Navy have an illustrious history. The first
23 U.S. Navy submarine -- actually the first
24 operational submarine in the history of the
25 world's navies, was the VI boat built by John

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1 Holland. Holland was an Irishman whose initial
2 efforts for submarine development were actually
3 funded by the Irish Finians who wanted a boat
4 that would sneak up on the British Navy ships and
5 sink them. But out of that, with advances, he
6 built a submarine that actually could launch
7 torpedoes and sink ships. This was in 1900.
8 There is a crew of six and three torpedoes in the
9 boat. It could dive to 75 feet.

10 (Slide)

11 Over the years, there was a
12 significant advance in technology, the
13 introduction of diesel engines in submarines, and
14 by World War II the U.S. Navy fielded a capable
15 submarine and that played a huge role in victory
16 in the Pacific. This is one of the World War II
17 fleet boats. You can see in the design, it
18 looked very much like a surface ship and, in
19 fact, for practical purposes, World War II
20 submarines were really surface ships that could
21 submerge for a day or two.

22 (Slide)

23 After World War II, however, there
24 were a number of advances which ended up
25 culminating in the first true submarine, a boat

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1 that could submerge and stay under the water for
2 days and weeks on end. This was the USS
3 Nautilus, which not only had nuclear power but
4 incorporated atmospheric control that made life
5 and service underwater a practical capability.

6 (Slide)

7 Since that time, submarines have
8 continued to incorporate advances that improve
9 capability. Currently, the Intercontinental
10 Ballistic Missiles are on the SSBNs. These boats
11 really perform probably -- and I'll say this with
12 Air Force officers present -- the key in the
13 strategic nuclear triad. These submarines are
14 actually quite big, they are about the size of
15 cruisers. They have a crew of about 155 and are
16 actually staffed by two crews, a blue and a gold.

17 These alternate service on the boats four months
18 at a time. Their longest missions are 74 days.
19 These are quite big, actually quite comfortable.

20 The attack submarines are actually quite a bit
21 smaller. They have smaller crews, about 135. We
22 have 56 in our inventory in the U.S. Navy. These
23 boats deploy for a few weeks to a few months, up
24 to six months at a time, fairly constantly on a
25 15- to 18-month cycle. And, by the way, these

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1 boats are actually limited in terms of their
2 underway time only by the amount of food that can
3 be packed onboard. If the equipment is working,
4 these boats can stay underway indefinitely,
5 limited only by the food.

6 (Slide)

7 These are weapons delivery systems,
8 and submarines field a number of weapons. You
9 can see the Mark 46 torpedo. This is a very
10 capable weapon that probably everybody is
11 familiar with. Our submarines are currently
12 launching Trident II D5 missiles,
13 intercontinental ballistic missiles and, again,
14 part of the strategic deterrence triad.

15 One-third of the missiles launched in
16 Operation Iraqi Freedom were launched from
17 submarines. Cruise missiles is a growing
18 capability in the Submarine Force. They were
19 also launch vehicles during the operations in
20 Afghanistan. And in addition, besides missiles
21 and other traditional ordnance, submarines launch
22 Special Operations Forces. You can see one of
23 the SEALs here fixing the SEAL delivery vehicle.

24 This is a mini-submarine that can get SEALs to
25 the beach for special operations. So, as you can

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1 see, quite a capability, among others.

2 (Slide)

3 This is a cross-section of a typical
4 submarine, attack submarine. You can see the
5 engineering room back aft. The propulsion
6 equipment, a lot of the auxiliary equipment is
7 back here. It's separated from the forward
8 compartment by the reactor compartment, which is
9 not occupied underway. The forward compartment
10 houses all of the weapons, weapon systems, weapon
11 launch systems, the crews' living space, and
12 essentially where the ship is controlled.

13 This is quite a small area. What you
14 have in a typical submarine is a situation where
15 you've got 130 or so men living in the equivalent
16 of a three-bedroom house. So submariners
17 actually live in a space that doesn't meet
18 federal prison standards. Quite challenging.

19 (Slide)

20 The unique thing about submarines is
21 that they are truly a closed atmosphere. When
22 men started working in nuclear submarines, this
23 was the first time that human beings in
24 significant numbers started living and working in
25 a closed environment. Men are continually

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1 rebreathing the same atmosphere. Oxygen is
2 generated by the electrolysis of seawater, carbon
3 dioxide is scrubbed. But by and large, the men
4 are constantly breathing the same atmosphere for
5 weeks or months on end. So, certainly things
6 like OSHA eight-hour limits, those sorts of
7 things, really go out the window on submarines.

8 In addition, submariners lose the
9 typical day/night cues from the rising and
10 setting of the sun and nighttime. The only way
11 that people keep track of the day/night is really
12 what meals are being served. So it's quite
13 disorienting, and it certainly takes some getting
14 used to, if you are able to.

15 There is also, in addition, a good bit
16 of noise on a constant basis -- 60-80 db
17 frequently underway. There's also limited
18 communications. There's really no access as
19 there is on surface ships to e-mails from home,
20 communications. There is also the issue of
21 family separation. So it's certainly, for the
22 typical submariner, a challenging environment.

23 What you are looking at in the photo
24 there is actually the largest space in the boat
25 which, if the boats don't get underway for the

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1 hurricane avoidance today, many of you will get a
2 chance to see.

3 (Slide)

4 Submariners make up a small portion of
5 the Navy, about 4 percent of the number of ships.

6 There are about 40,000 submariners on active
7 duty, about 14,000 are actually assigned to
8 submarines at any one time, with the balance on
9 the beach in training and other billets.

10 The average of our submariners is 27
11 for the enlisted community, and 30 for the
12 officers. It's an all-volunteer force, all male.

13 (Slide)

14 Submarines operate quite often as
15 individual units. They frequently do not steam
16 with the fleet, so they don't get the traditional
17 support services as you might expect from larger
18 ships. They can be anywhere on the globe. They
19 can be under the ice. They certainly forward
20 deploy to very hard-to-reach areas.

21 This makes medical care a challenge.
22 I think you can appreciate in this shot here that
23 there is no way for the helicopter to land. This
24 helicopter is dropping a small package, but
25 there's really no easy to perform a medical

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1 evacuation from a submarine. Quite a frightening
2 experience when it has to be performed.

3 (Slide)

4 This makes medical care on submarines
5 challenging. Submarine medical care is provided
6 for by an independent duty corpsman. These are
7 corpsman volunteers who go to the Undersea
8 Medical Institute, get a year of training which
9 essentially transforms them into sort of mini-
10 physician's assistants. They are supported on
11 the beach by undersea medical officers who
12 occasionally get underway, and by the support
13 staff of the clinics and hospitals the Navy
14 operates.

15 The corpsman has a very limited amount
16 of space. He has essentially no diagnostic
17 equipment. There's no x-rays, not a whole lot of
18 medications and supplies, but he does have good
19 communications ability to the beach. There's
20 message traffic, sometimes voice traffic, with
21 the beach in case there is a serious injury or
22 illness. The bottom line is, though, that the
23 corpsman is really isolated.

24 (Slide)

25 So that makes screening of submariners

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1 essential. We can avoid a lot of problems, a lot
2 of medical evacuations and troubles underway by
3 carefully screening our group. Besides the
4 typical screening that we get with the average
5 sailor, we demand that submariners not get
6 onboard with asthma, significant GI problems,
7 migraine, kidney stones are waiverable, but
8 certainly they have to be controlled with diet,
9 psychological problems -- and I'll talk about
10 screening in a minute -- issues such as rashes
11 that may get worse underway. All of these things
12 are submarine disqualifying.

13 You can see just from a claustrophobia
14 viewpoint, anyone getting into a submarine has
15 got to go down this hatch on the ladder there, so
16 it's a tight fit on the attack boats.

17 (Slide)

18 Talking about R&D for submarine
19 medicine, the bulk of that is done at the
20 Submarine Medical Research Lab just up the hill
21 here. Submarine Medical Research Lab has an
22 illustrious history. It began in World War II
23 when it began training lookouts with vision
24 research results. It trained corpsmen, medical
25 officers, and continued to make contributions

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1 over the years to submarine and diving medical
2 research.

3 (Slide)

4 Saturation diving started off at the
5 Submarine Medical Research Lab. The Genesis
6 project culminated in the Sea Lab, which really
7 put men under the water. The Farnsworth Lantern
8 for color vision was developed at the Lab, as was
9 the International Orange, air/sea Rescue Red
10 Color was identified by the Vision Department.
11 And since then we have made major contributions
12 to submarine escape and rescue, as well as
13 submarine atmosphere control, and an ongoing
14 evaluation of medical qualifications for
15 submarine duty.

16 (Slide)

17 Assets at the Lab include 14 Ph.D.s,
18 three M.D.s, and a well-qualified staff of
19 support personnel. We have unique facilities.
20 We have three recompression chambers, one of
21 which is a saturation dive complex where we can
22 put up to eight people in a saturation dive
23 environment for several weeks on end. We also
24 have anechoic and reverberant chambers for
25 acoustic research, a number of audio testing

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1 booths, vision research suite, and a closed
2 atmosphere test room.

3 (Slide)

4 What I'd like to do is just cover the
5 Laboratory mission just very briefly. We get our
6 direction from the Chief of Naval Operations,
7 BUMED, and the Submarine Force, looking at sea
8 strikes, sea shield and sea basing. We support
9 the projecting of power, defensive assurance and
10 joint operational independence.

11 (Slide)

12 We get our core research direction
13 from BUMED and ONR, looking for a healthy and fit
14 force, casualty prevention, casualty care and
15 management.

16 (Slide)

17 So the bottom line is we have a focus
18 on operational health and fitness, the fit force.
19 We look to minimize casualties and do research
20 on casualty care, as well as maximizing
21 readiness.

22 (Slide)

23 What are the psychological
24 qualifications for submarine service? This is a
25 unique challenge. What we do in submarine

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1 screening, which we've been doing for 60 years,
2 is look at individuals to make sure that they can
3 adapt to the submarine environment. We want to
4 eliminate the bizarre personality types, obvious
5 personality disorders, people that we have found
6 through experience are not going to fit in.
7 Submarine crews are small, they are very close-
8 knit, and every person is a key player.
9 Virtually everyone on the boat is doing important
10 work and very serious work that if a mistake was
11 made could have disastrous consequences. So this
12 is an important project, and one that we are
13 continually improving with new products and
14 projects.

15 (Slide)

16 We're also looking at improving
17 performance underway. One of the characteristics
18 of submarine duty now is that submarines operate
19 on a watch-standing schedule of 6 hours on watch
20 and 12 hours off. This pretty much defies
21 circadian rhythm effects.

22 We're looking at transitioning to a
23 different watch-standing schedule which we are
24 going to be testing later this year on a boat out
25 of Bremerton. A different watch-standing

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1 schedule that is more in sync with circadian
2 rhythm effects and provides longer sleep time
3 breaks to catch up on lost sleep. This has a lot
4 of fleet interest and one we're looking forward
5 to.

6 We've already used research done
7 earlier on this project to change the hours of
8 boot camp, to great success. By modifying the
9 hours and moving back reveille, we are improving
10 performance in boot camp.

11 (Slide)

12 One of the big projects we've had for
13 the last decade has been improving submarine
14 disaster preparedness. We're doing a lot of work
15 in submarine survivability. Work at NSMRL has
16 essentially doubled the survival time in a sunken
17 submarine. This can allow rescue forces to get
18 to the scene, pick up survivors, or permit them
19 to escape on a more timely basis.

20 What we did in one project was take an
21 idea of the French, improve that, tested that at
22 the Lab, developed a product that is going to the
23 fleet that can scrub carbon dioxide. This has
24 already been tested on a Norwegian boat earlier
25 last year, and culminated in the U.S. Navy's

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1 first submarine survival exercise this past March
2 on USS Dallas. We had a lot of lessons learned
3 information that can help us live until --
4 submariners live until rescue forces reach the
5 scene.

6 I'd also point out we are heavily
7 involved with our international partners. We
8 meet with NATO, we meet and discuss mutual
9 humanitarian issues regarding submarine escape
10 and rescue.

11 (Slide)

12 We've also been involved in submarine
13 escape. Submarine escape on many of the boats
14 has been done with a stinky hood. I think you
15 can see these hanging on the bulkhead here. This
16 is essentially a life vest with a hood. If
17 you've seen the Titanic, you realize that
18 hypothermia is a tremendous risk in cold water,
19 and that's the case where most submarines
20 operate. We've introduced, starting a year ago,
21 the British-developed suit called the SI suit,
22 submarine immersion equipment. This suit
23 provides 24-hour protection in cold water from
24 freezing, if not longer; has its own one-man life
25 raft. We've also participated in the design of

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1 the new Escape Training Facility, and we've also
2 provided technique and guidance information for
3 submarine escape itself.

4 (Slide)

5 I think you can appreciate the
6 difficulty here. Here is a submariner going
7 through the hatch. He's popping through, coming
8 out through his bubble column there and going to
9 the surface from as deep as 600 feet, at a rate
10 of 400 feet per minute. And we're starting that
11 training on everyone here in Groton in about a
12 year.

13 (Slide)

14 We've also supported submarine rescue.
15 Escape may be more likely, but rescue is
16 preferred. We can rescue submariners from a
17 downed submarine at depths as low as 2,000 feet
18 with our current system, a submarine rescue
19 chamber, as well as the mini-submarine DSRV
20 Mystic. If you've seen Hunt For Red October,
21 you've seen the Mystic.

22 We're transitioning to a new rescue
23 module. We've also been in the design phase of
24 that asset.

25 (Slide)

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1 We also do other work. The Marines
2 are currently testing our noise reduction
3 stethoscope. This is a device that allows
4 personnel in the field, FMF corpsmen, to hear
5 heart and lung sounds without getting as much
6 pickup from surrounding noise. We're hopeful
7 that this unit can be transitioned here over the
8 next couple of years, but there's a lot of
9 interest in this in the Marine Corps.

10 (Slide)

11 We have also developed an underwater
12 sound level meter. One of the problems Navy
13 divers have is that they are exposed to the noise
14 from a lot of underwater equipment.

15 (Slide)

16 How much noise, what kind of exposure
17 they're getting can be measured with this device
18 here. It's essentially a dosimeter for sound
19 under the water, a unique tool.

20 (Slide)

21 One of the projects that we're
22 particularly interested in is the Submarine
23 Atmosphere and Health Assessment Program, SAHAP.

24 One of the problems we have in the Submarine
25 Force -- and this is the concern of most of us in

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1 the community -- is that we don't have sufficient
2 knowledge regarding the submarine atmosphere,
3 what compounds are in the atmosphere, and given
4 the state of modern toxicology what the effects
5 of these compounds are on a long-term basis.

6 We've developed new passive technology
7 with an outside vendor, but the bottom line is we
8 are trying to emphasize this program to make sure
9 that with time we don't uncover smoking guns that
10 present a significant health risk for our force.

11 (Slide)

12 And in the process of looking at the
13 force, we're developing a Submarine Health
14 Surveillance Program, an ongoing program. We've
15 had programs and projects in fits and starts, but
16 nothing like the program that we want to see on
17 an ongoing basis.

18 I'm preaching to the choir here, but
19 basically we want to look at the distribution of
20 illnesses and injuries. We want to use that
21 information to develop prevention and control
22 programs.

23 (Slide)

24 Our health studies done in submarines
25 include a couple of mortality studies. One that

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1 came out in '93 performed by Yale, looking at a
2 cohort of 63,000 submariners from '69 to '82, no
3 smoking guns in that. Basically no trends that
4 would indicate any serious problems. This also
5 seems to be the case in the ongoing NYU study
6 that's probably going to come out later this
7 year. That's looking at mortality.

8 We had a number of studies looking at
9 morbidity in the '60s and early '70s, no real
10 issues there. Since that time, though, we've had
11 very little look at submariner morbidity.

12 NASA provided some funding for a study
13 by USUHS looking at our SAMS data, Submarine
14 Automated System data, in the late '90s, but
15 that's really about it.

16 (Slide)

17 We have a lot of data. We've got
18 MEDEVAC data, we've got SAMS data, the medical
19 record reports. We've got waived information
20 on disqualifications waivers. Certainly we have
21 Safety Center data, accident reports and
22 atmosphere logs from the boats and, of course, we
23 have the mortality data I mentioned. But the
24 bottom line is we've got a lot of data. We are
25 going to put it together and generate some really

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1 useful reports.

2 (Slide)

3 This is going to be valuable because
4 it's going to tell us where we need to direct our
5 research to. The fleet operational commanders
6 and BUMED can use this for planning purposes.
7 The training staff can use this to focus their
8 training effort on our corpsmen. Naval Sea
9 Systems Command is interested in this data for
10 their engineering and life support. And,
11 finally, there's other interested customers.
12 NASA uses submariner information for planning
13 long-term space flight.

14 (Slide)

15 Any questions?

16 DR. OSTROFF: Thanks very much. It
17 was a terrific presentation. Let me open it up
18 to the Board and other participants for
19 questions. I always start with asking a couple.

20 I'm curious -- you know, again, this
21 is an area that most of us probably don't know
22 much more than what we saw on Hunt For Red
23 October, but can you give us a sense of how often
24 things like medical emergencies come up in a crew
25 of this size, and how often you have to do things

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1 like think about MEDEVAC? And then, also, given
2 the closeness of the crew, how often do you run
3 into problems like somebody catching a cold and
4 you turn around and all 138 of the crew also have
5 a cold, and what do you do about that?

6 CDR. HORN: Well, fortunately, most of
7 the time illnesses are mild. What typically
8 happens in submarines is that when a boat gets
9 underway for a lengthy mission, virtually
10 everyone gets the cold, upper respiratory
11 infection, that one or two people bring onboard
12 invariably. So everybody has sniffles and coughs
13 for about a week or two. Once it's made its
14 rounds through the boat, that's generally the end
15 of most of the respiratory infections. A lot of
16 people will have a little bit of a sniffle
17 throughout the length of a mission, and that's
18 one thing we're currently looking at. But the
19 bottom line is, fortunately, most infections are
20 mild.

21 One of the unique things about
22 submarine environment is that small minor cuts
23 and injuries, they don't heal. A scratch
24 underway will pretty much be a problem until the
25 boat gets back to port, the hatch is popped,

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1 people get out on the beach. We think that's due
2 to the rather low oxygen levels and the high CO₂
3 levels interfering with wound healing. But those
4 are some of the problems that we see.

5 Medical evacuations for the serious
6 problems occur in a boat maybe once or twice a
7 year on a busy boat, sometimes more often if
8 there are a number of port calls. The serious
9 injuries and illnesses are fortunately very few.

10 They do happen, but not often. These are quite
11 disruptive because many times the boat will
12 literally have to go off-mission, break off its
13 mission and steam to the nearest available port
14 to get the individual off.

15 DR. OSTROFF: Julian.

16 DR. HAYWOOD: You gave us the average
17 age. What is the age range on a submarine?

18 CDR. HORN: Nearly everyone is below
19 the age of 40. Occasionally, there will be a few
20 people older than 40, but by and large you're
21 looking at essentially 19 years old up to 40 in
22 both the officer and enlisted ranks, of course
23 officer being somewhat older. And this is good
24 because we usually don't see cardiac problems.
25 We have an occasional MI, and these are

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1 invariably in smokers, as you might expect, but
2 these are -- infarcts, coronary insufficiency is
3 fairly unusual.

4 DR. OSTROFF: Greg.

5 DR. POLAND: Your comment about wound
6 healing caught my attention. Did you have any
7 issues or any data on healing of smallpox
8 immunizations in sailors underway?

9 CDR. HORN: No, currently have none.

10 DR. CLINE: What percent of all
11 missions over the last some period of time have
12 had to be broken off for any reason? What sort
13 of missions get completed on schedule?

14 CDR. HORN: Nearly all of them.
15 During the Cold War, a lot of times the mission
16 was pursued. If an individual got severely ill,
17 he was kept onboard, but that's unusual. By and
18 large, any serious illness or injury or risk of
19 disability will prompt the boat to pull into port
20 and get the individual off. But it's a very
21 small percentage. Again, it goes down to
22 screening safe operations. Injuries in
23 submarines are almost invariably of a minor
24 nature. Because it is a compact, well-designed
25 ship, there are generally very few injuries, and

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1 what injuries there are, usually it's in the food
2 preparation area where the mess cooks end up
3 mishandling a knife or something.

4 DR. CATTANI: Jackie Cattani. You
5 mentioned respiratory illnesses, but I would
6 imagine one of the worst things that could happen
7 would be an epidemic of something like neuro-
8 virus which has been very common on cruise ships
9 and seems to be coming more and more common.
10 Have you had any experience of gastrointestinal
11 epidemics, and if you did or didn't, what do you
12 do to protect yourself against those?

13 CDR. HORN: There really hasn't been
14 any serious outbreak of disabling diarrhea or
15 other GI problems that really affected the boats
16 in terms of epidemic. The Navy has rigorous food
17 handling guidelines. The corpsmen inspect the
18 food preparation areas and are responsible for
19 assuring that the mess cooks run everything on a
20 sanitary basis. So food-borne illness outbreaks
21 are really practically unheard of. But, no,
22 we've successfully avoided most of the problems,
23 and I think that's due to hygiene practices and
24 rigorous adherence to guidelines.

25 DR. OSTROFF: Mark.

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1 DR. BROWN: I have two questions.
2 First of all, you mentioned that there are a
3 number of mortality and morbidity studies of
4 these crewmen that are encouraging and seem to be
5 reassuring that there aren't any health problems
6 among this class of service. But I'm wondering
7 how you would do a study like that? I'm
8 wondering who you would use as a comparison
9 group? I mean, this is a very, very select group
10 of individuals, and it would be hard -- if there
11 were something going on, it's for me to imagine
12 how you would design a study that would have a
13 control group where you would be able to pick it
14 up.

15 My second question is, if you'll
16 pardon me, is a little bit more naive, but why do
17 you make these subs so small, why not just make
18 them bigger?

19 (Laughter.)

20 CDR. HORN: Well, actually, to address
21 the first question, we do get the healthy worker
22 effect. I mean, we clearly have a screened
23 population. But, yes, it does. It is almost an
24 apples-and-oranges. About the only thing we can
25 do is compare this group with healthy adult males

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1 who are other populations.

2 The NYU study should be out by the end
3 of the year and is going to provide some
4 comparison numbers, but the bottom line is -- the
5 only comparable analog population is essentially
6 space flight, and they have very few numbers.
7 They are coming to us for our numbers. So it is
8 difficult.

9 And to answer your question,
10 submarines have gotten bigger. If you notice the
11 Holland, the progression of the fleet boats, and
12 now we've got submarines the size of cruisers
13 that are going down. So they have gotten bigger.

14 And the crew sizes have stayed fairly much the
15 same, but we are -- they are bigger. But,
16 obviously, bigger submarines present bigger
17 engineering challenges. They certainly require
18 more fuel. Many times, because you're packing
19 more ordnance in, more equipment, you've got more
20 maintenance issues. So, it all really boils down
21 to mission, what you're designing the submarine
22 to do. Humans are sort of an afterthought. You
23 pack in the weapons systems, the ordnance, the
24 engineering and, oh, by the way, geez, we're
25 going to have to put some racks in someplace. So

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1 that's pretty much the way submarine design has
2 gone.

3 DR. OSTROFF: Dr. Campbell.

4 DR. CAMPBELL: Doug Campbell. I'll
5 make another follow-up on these long-term
6 studies. Are you looking at these studies to
7 follow up people over time, like for years, or is
8 it more just while they are -- the immediate
9 after-effect of being in a submarine? And, also,
10 what are some of the atmospheric constituents
11 that you're looking at for toxic effects?

12 CDR. HORN: To answer the first
13 question first, the mortality studies are pretty
14 much -- we do have a cohort from the early days,
15 the '60, '70, to '80 time range. And we're
16 adding to that cohort, and we're following it
17 over time. We're periodically going to
18 investigate this group.

19 The NYU study, from what I understand,
20 has identified 4 percent of this group as being
21 deceased. So that's a rather low figure. So
22 we're going to be reinvestigating this over time.

23 That group, too, got a little bit more exposure
24 to radiation and more exposure to a somewhat
25 dirtier atmosphere, we think, in the earlier days

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1 of the Submarine Force. Right now, submariners
2 get less radiation underway than they do --
3 submerged, than they do when they're on the
4 surface, on land, due to the effect water
5 occlusional cosmic rays and the shielding from
6 the reactor. So radiation isn't much of an
7 issue. Those of us in the business are more
8 concerned about atmospheric constituents, things
9 like formaldehyde, ozone, a number of the
10 hydrocarbons, breakdown products of freon, those
11 sorts of things.

12 Just to give you an example, in the
13 early days of atmospheric control, there was a
14 burner put on the boat to burn the hydrogen that
15 occasionally came off from the oxygen generator,
16 and other compounds. When there was a freon
17 leak, the freon would go through the burner.
18 Hydrogen chloride would come out and, in some
19 cases, bad enough to where everyone, when they
20 got back from an underway mission, had to have
21 their fillings replaced. Their fillings had been
22 eaten up by the acid so much.

23 We're in a lot better shape now. But
24 those are some of the problems in terms of
25 atmospheres we've seen in the past.

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1 COL. GARDNER: Is there a tobacco
2 policy that's screened?

3 CDR. HORN: We don't screen for
4 tobacco use. The Submarine Force has seen the
5 trend that the rest of the Navy has in terms of
6 less tobacco usage. It's probably less than 25
7 percent now. It really depends on the boat.
8 SEALs have the discretion to set up their own
9 tobacco use policy. It's fairly uniform across
10 the fleet, though, that smokers on submarines
11 will go to the fanroom so that the smoke goes
12 directly into the filters. There's really no
13 smoking in other areas of the boat, by and large,
14 on a regular basis.

15 COL. GARDNER: What about snuff?

16 CDR. HORN: Snuff is used -- you know,
17 a lot of the guys like the smokeless tobacco.
18 That again falls under the tobacco use policy.

19 DR. HAYWOOD: You might have mentioned
20 this, but what is the average career time in the
21 environment?

22 CDR. HORN: The average career time,
23 it sort of depends, but I would say that actually
24 under the water, 20-year career veterans may
25 spend a sixth or a fifth of his time, if not

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1 more, actually submerged, but that's a rough
2 guess, and it's highly variable. It depends on
3 the ship assignments, how many ships an
4 individual has been to, what their operational
5 tempo was like, that sort of thing.

6 DR. HAYWOOD: Is that being considered
7 in all of the studies and what the effects are?

8 CDR. HORN: It's difficult to get that
9 data from the early boats. One of the things
10 that we're looking at in getting our health
11 surveillance program going is segregating medical
12 events and problems underway from those on the
13 beach, and also how much time was spent underway.

14 DR. OSTROFF: Dr. Cline, and then
15 Poland.

16 DR. CLINE: When a boat is away from
17 its home port, and particularly in foreign ports,
18 is there some policy about minimizing contact
19 between crew and the local population?

20 CDR. HORN: No, other than the
21 standard terrorism brief and the in-port warnings
22 and information that the crew gets. Every time a
23 crew pulls into a foreign port, they are given a
24 brief on the local situation, and this comes from
25 information from the Naval Attaches at the

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1 Embassy, the fleet commanders who have got local
2 information. So they get a good bit of
3 information from there.

4 DR. CLINE: I'm thinking particularly
5 about the risk of acquiring pathogens in that
6 environment, and then bringing it back to the
7 closed environment.

8 CDR. HORN: Well, that is a risk and,
9 in fact, in our community, we feel actually the
10 biggest biological exposure that the boat has is
11 from port calls.

12 DR. OSTROFF: Greg.

13 DR. POLAND: You mentioned screening,
14 and I'd be interested to sort of hear what is the
15 classical profile of a successful submariner, and
16 what are some of the psychological issues you
17 face with them.

18 CDR. HORN: Well, the submarine
19 adaptability, if you look at the data,
20 submariners -- and divers are sort of in the same
21 personality types. Successful ones have just
22 enough antisocial traits to be independent and
23 active and aggressive and attack problems. They
24 certainly don't have any claustrophobia or
25 claustrophobia tendencies.

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1 You'll find submariners tend to -- I
2 don't want to say be more introverted -- but they
3 internalize more than your typical surface
4 sailor. You know, aberrant behavior in a surface
5 sailor might be someone who decides to paint his
6 hair silver with fire retardant paint. You don't
7 see that in a Submarine Force, generally. And
8 it's a brighter group intelligence-wise.
9 Submariners are significantly brighter than their
10 cohorts and colleagues in other communities.

11 DR. POLAND: What sort of problems do
12 you tend to see particularly in long deployments?
13 Is it depression? Is it fatigue?

14 CDR. HORN: The long-term mission
15 generally will -- I'll just give you the data in
16 one study that I did on one boat when I gave a
17 psychological screening test to a group of 122
18 sailors. What we saw was in the middle of the
19 90-day test period, higher scores on depression
20 and irritability and anger, but that was really
21 it, and those were within normal ranges. At the
22 end of the study period when the sailors were
23 getting ready to pull into port, they had
24 recovered. But significant underway time is
25 fairly debilitating, and it's really a problem

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1 that the wives complain about because many times
2 they haven't seen their husbands in two or three
3 months, or even longer, and when Daddy comes in,
4 Mom and the kids are all ready to have fun, go to
5 Disneyland. And by the time he gets back, he's
6 worn out, he's exhausted, he wants to do nothing
7 but sleep and cook barbecue for two weeks. And
8 that creates a little bit of problem. It
9 definitely takes some on-shore recovery time from
10 a mission.

11 DR. POLAND: What's the maximum time
12 you can sort of safely, from the human factor
13 viewpoint, be out?

14 CDR. HORN: I almost want to say
15 indefinitely. Realistically, in the four-month
16 mission that I did, 113 days submerged, I was
17 convinced that these guys could have stayed out a
18 month or two longer without any problem at all.
19 Once they had a routine going, it was just "do
20 the work, keep plugging, keep charging". I mean,
21 it could have been months.

22 DR. CLINE: You mentioned isolation
23 from family and communications, but do
24 submariners have information from the outside
25 world? Can they listen to the radio? Is there

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1 any access to what's happening in the world?

2 CDR. HORN: Yes, there is, in two
3 respects. The families will occasionally -- will
4 periodically send, roughly every week, a
5 "familygram", very low frequency so they are slow
6 transmission rate. They are limited as to the
7 number of words, but this keeps the sailor
8 informed as to what's going on. And there has
9 been the recent introduction of e-mail, at least
10 one-way e-mail, if not two-way. So that's been a
11 big improvement. But that definitely is a
12 challenge. When the submarine goes to the
13 surface, even though it may be submerged, many
14 times the radioman will string a wire -- and I've
15 been in the middle of the Pacific and listened to
16 a radio station in Sacramento. So there is a way
17 to get news and there is a newsgram, but it's --
18 again, it's fairly limited.

19 COL. WITHERS: What factors do
20 submariners identify as to why they go into that?

21 CDR. HORN: Well, I think it has an
22 appeal. Part of it it's a volunteer force,
23 special pay somebody mentioned. Submarine pay
24 can be up to \$600 a month -- well earned, I might
25 add -- but I think it's the challenge of being in

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1 a close-knit group doing important work.

2 One of the big things that career
3 submariners mention is that they are working on
4 unique equipment, doing unique things. For
5 instance, radioman has got access to radio
6 communications equipment that the likes of which
7 he is not going to be able to see or work on in
8 the civilian world. I'm an amateur radio
9 operator and only recently have I seen receivers
10 in the commercial market that the military has
11 been using for a decade or two. So, it's the
12 chance to work on unique equipment, do unique
13 things, and just going to sea. I think that's
14 it, the uniqueness of it more than anything, and
15 the esprit de corps that you have.

16 DR. OSTROFF: Dr. Brown.

17 DR. BROWN: I have a question from the
18 VA perspective. Of course, when the Department
19 of Veterans Affairs would see one of these
20 individuals, it would be after he had separated
21 from military service. And I was thinking as you
22 were speaking, I've actually seen -- part of my
23 job is -- professionally I'm a toxicologist, and
24 occasionally I would get claims from veterans who
25 were asking for disability compensation for an

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1 injury that they sustained while they were in
2 military service, and if it has anything to do
3 with environmental exposure, chemical exposure or
4 something during their military service,
5 sometimes it will come across my desk. And I've
6 actually seen claims coming in from submariners
7 where their issue is they were exposed to some
8 chemical, and they know -- some of them know or
9 have information about the kinds of chemicals
10 that they might have been inhaling in the air
11 that they were breathing while they were onboard.

12 And my question is, is there
13 information about these? Sometimes these claims
14 are a little odd, sometimes they don't make
15 sense. If they are using something ethylomine
16 (phonetic) as a scrubber, I believe that, that
17 makes sense, that would be a good scrubbing
18 agent, but sometimes it can get a little bit more
19 elaborate. Do we have information available
20 about the kinds of chemicals -- you mentioned
21 formaldehyde, for example -- is there data about
22 where people have gone out and measured what
23 kinds of essentially occupational air exposures?

24 CDR. HORN: We do have lists of
25 chemicals that we know submariners are exposed

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1 to, and these were obtained from making surveys
2 on the boats, actually sampling. So we know in
3 the submarine environments, looking at all
4 submarines, we've got a fairly good feel on
5 potential chemicals. Right now we've got a list
6 of over 200 chemicals of concern, chemicals that
7 we know have the potential for effects that we
8 are fairly certain that are at low levels, that
9 present minimal risk, otherwise we wouldn't put
10 them on the boats. But, yes, we do have a
11 survey.

12 What we don't have is an individual's
13 exposure on a boat, and that's one of the things
14 that we're really trying hard to get money to
15 support, is a program of sampling, essentially
16 putting dosimeters in boats that will tell us the
17 exact exposure an individual has if he's assigned
18 to that boat for that particular time. But
19 that's one of the issues that we're trying to
20 support the government with, specifically your
21 agency. We would like to be able to tell our
22 customers, the Submarine Force, the VA, "This
23 individual was exposed to these chemicals during
24 his service", but we're a long way from being
25 there yet. Carbon-tetracarbide was a

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1 big issue in World War II, they used it to clean
2 electrical contacts on equipment. There were a
3 number of exposures to that, and that turned out
4 later to have -- later to be an issue. But it's
5 a serious problem, and we could certainly help --
6 and we have in the past -- but we would certainly
7 support whatever claims your agency has in terms
8 of compounds and trying to identify in submarine
9 service what an individual might have seen.

10 DR. OSTROFF: Grace, and then Greg.

11 DR. LEMASTERS: Grace Lemasters. The
12 combination of chronic noise and exposure to
13 solvents like Toluene has been associated with
14 long-term hearing loss. I was wondering if in
15 your health surveillance program you've tracked
16 hearing capabilities over long-term, and
17 particularly with the New York study. I don't
18 know if they looked at those type of morbidity
19 problems.

20 And then the other quick question was
21 do you provide vitamin D and calcium
22 supplementation to the ship's crew?

23 CDR. HORN: To answer those questions,
24 no, there was no look in the mortality studies at
25 any morbidity. Hearing loss is something we

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1 check for on a regular basis. Every few years
2 submariners are required to get audiometry. So
3 we look fairly closely at hearing loss. And this
4 has been a big problem -- well, not a truly big
5 problem, but it's been one of concern and one
6 that we see. There are a number of claims, and
7 it does cost the government a considerable amount
8 of money to pay for the hearing loss that sailors
9 get, and that's just in the Submarine Force.
10 But, yes, we look at that.

11 Now, I would say that Toluene exposure
12 and other hydrocarbons is actually fairly low
13 because we have an active program of avoiding
14 solvent exposures. For instance, there's no
15 painting underway. Anything that's going to
16 release a lot of hydrocarbons or other chemicals
17 is forbidden underway, without ventilation.

18 And in terms of vitamin D, that is a
19 unique issue. Submariners don't get sunlight.
20 We've shown that vitamin D levels fall after a
21 couple of weeks. The only vitamin D they get in
22 the diet is from milk, dairy products that are
23 gone after a week or two. We have shown some
24 bone turnover indicators. But a recent study we
25 did showed that really we didn't have a

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1 significant problem, and certainly it's readily
2 reversible.

3 We've continued to look at this. NASA
4 has looked at the same issue, and we have been
5 collaborating on this. But right now we don't
6 feel vitamin D supplements are needed.

7 One of the confounding issues there is
8 that if we give vitamin D, we're going to
9 increase urinary calcium excretion, and that may
10 increase our likelihood of kidney stones. So if
11 we knew that the crew needed vitamin D, we'd give
12 it to them, but that certainly is a
13 consideration.

14 DR. OSTROFF: Greg.

15 DR. POLAND: Can you exercise aboard a
16 submarine, and do people tend to gain or lose
17 weight with the longer deployments?

18 CDR. HORN: The exercisers lose
19 weight, an average of 3 pounds over a 90-day
20 period. The ones that don't exercise will gain a
21 little bit of weight. But there is exercise
22 equipment onboard, several machines, stair-
23 stepper, treadmill. So the individuals who want
24 to stay in shape have the opportunity, by and
25 large, but it's tough. I mean, given the work

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1 schedules, the amount of time, the lack of sleep,
2 it takes real dedication to keep a fitness
3 program going, but it certainly is possible. It
4 is possible to do that.

5 DR. OSTROFF: Dr. Cline.

6 DR. CLINE: Barney Cline. That raises
7 another sort of related question of how
8 submariners use their leisure time, particularly
9 when submerged, and what other leisure activities
10 are available in terms of reading at the library,
11 or are there videos? And have there been studies
12 to see how these resources might affect overall
13 fitness and behavior?

14 CDR. HORN: Well, recreation onboard
15 the boat I was on for four months was -- by the
16 end of the mission, was looking at Shania Twain
17 videos, but there is a large movie -- there is a
18 large library of DVDs now. There's generally a
19 movie every night that a number of the crew will
20 have a chance to attend. A lot of guys just
21 won't have the time to do that.

22 There is a paperback library onboard,
23 it's usually fairly small, and a lot of guys will
24 bring their own books. One of the popular
25 things now for the younger guys is the video

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1 games. That is a big recreation for the younger
2 guys, Gameboys and computer games.

3 DR. OSTROFF: I have a couple of
4 questions. I'm intrigued by a couple of the
5 things that you mentioned. One of them is the
6 business about the sunlight. Have there been any
7 studies or any work done to try to -- I mean,
8 again, it's hard for me to imagine what this
9 environment is like. I imagine most of the
10 lighting is florescent on a submarine.

11 CDR. HORN: Yes, it is.

12 DR. OSTROFF: Has there been any
13 attempt to try to replicate natural sunlight in a
14 submarine environment? And the second is in
15 terms of this sleep/wake cycle. It seems to me
16 to be a relatively no-brainer to try to reproduce
17 a natural 24-hour cycle. Why has it not sort of
18 happened before?

19 CDR. HORN: In the late '70s the Naval
20 Sea Systems Command put some full-spectrum
21 lighting in the mess decks and, unfortunately,
22 these were essentially the gro-bulb lights from
23 the nurseries. Because they were dim, the crew
24 objected. They wanted brighter light. So that
25 was the end of full-spectrum lighting at that

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1 point in time.

2 We are looking at that. There are
3 vendors who make those lights. There's some
4 interest in the Submarine Force in looking at
5 this issue. Certainly we'd like to look harder.

6 There was a look in the early '90s, a
7 study looking at the lighting, a brighter light,
8 and some visual cues to simulate a day/night
9 environment on the mess decks, but that was not
10 very successful.

11 One of the problems we're looking at,
12 do we have in the Submarine Force the equivalent
13 of a seasonal effect or disorder? Are we putting
14 in rather dim environments and creating sort of a
15 depressive effect? We don't know that. But we
16 have looked at high-intensity lighting to see if
17 that's an issue.

18 One British submarine tried that, and
19 apparently that was popular on that boat, but
20 that's -- again, that's work we have yet to do.

21 One of the problems in the high-
22 intensity lighting is that there are so few areas
23 that -- I mean, it would really -- to get the
24 lumens required, at least from what we've seen in
25 most of the studies, that would be a real

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1 challenge.

2 And, of course, the other issue is
3 that dim lighting is highly desirable to see all
4 the displays. If the ship is surfaced and you've
5 got topside watch-standers, we've got to have
6 low-level lighting to maintain night vision. So,
7 it's a real challenge, but one we've looked at
8 and one we really would like to do more
9 investigation on.

10 DR. OSTROFF: And the circadian
11 rhythms?

12 CDR. HORN: Circadian rhythms we want
13 to try to establish with our watch-standing
14 schedule. We'd like to get that going first, and
15 then go from there. But, normally, at any one
16 time on a submarine, the berthing areas are
17 always dark, and the mess decks are always
18 bright, and the work stations are bright in the
19 engineering spaces for safety, and they are dim
20 in the control room areas with all the displays
21 and lighting and so forth. So it really is a
22 controlled lighting situation.

23 DR. OSTROFF: And is there a
24 Submariner Reserve Force, or are they all active
25 duty full-time personnel?

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1 CDR. HORN: There are Submariner
2 Reservists, but most of their augmentation jobs
3 are -- actually, I'm a Reservist on a recall to
4 active duty. I'd been in 13 years, but the
5 bottom line is most Reservists do support work,
6 support jobs. It takes a tremendous amount of
7 effort to get on a submarine, get qualified in
8 that particular submarine, due to all the
9 complexity of the issues, and get integrated into
10 the crew. A Reservist would face a real pipeline
11 problem of getting directly to a boat with the
12 training needed and the qualifications to serve
13 on that particular unit.

14 DR. OSTROFF: Mark.

15 DR. BROWN: I've got one more
16 question. This is probably percolating in my
17 mind because of the discussion at lunch and
18 dinner last night. You mentioned these missions
19 might go on typically as long as four months, I
20 think you mentioned.

21 CDR. HORN: That's not typical, but
22 some do.

23 DR. BROWN: Well, my question is, what
24 are people eating at, say, like the end of the
25 third month or something? What would they eat?

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1 CDR. HORN: Canned and frozen food.

2 DR. BROWN: Do you have nutritionists
3 that try to figure out -- obviously there's an
4 attempt to make sure that there are --

5 CDR. HORN: Right. All the diets are
6 developed by nutritionists, nutrition experts.
7 They are all reviewed by the mess cooks. The
8 Commanding Officer will approve all the menus on
9 the menu plan. Some COs don't like broccoli, so
10 there won't be any broccoli onboard.

11 (Laughter.)

12 But, yes -- I mean, as important as
13 meals are, as eating is to submariners, yes, it's
14 well looked at. The problem with submariners is
15 -- or, rather, meals is -- the nutrition is good,
16 it's just the problem is portion control. But
17 it's certainly nutritious food. It may get a
18 little bit dull -- may get a little bit dull --
19 but it is good food and it is well prepared.

20 DR. OSTROFF: Dana.

21 COL. BRADSHAW: Dana Bradshaw. Kind
22 of two short questions, I guess. One is with the
23 circadian rhythms, have you guys looked at
24 Melatonin to establish the circadian rhythms?
25 And, secondarily, I saw some studies on urinary

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1 cotarnine as a marker, and the nonsmoking people
2 on the subs, in order to even up the policy of
3 having the smokers sit in the fanroom, if that's
4 still showed that the elevated levels were there?

5 CDR. HORN: There is one study that
6 was done several years ago, there was some
7 indication of -- and I forget the levels -- but
8 secondhand smoke was not a big problem in the one
9 study that was done. So, we don't see a problem
10 there.

11 And your first question was?

12 COL. BRADSHAW: Melatonin.

13 CDR. HORN: Melatonin. No, we are not
14 telling the troops to use Melatonin to help
15 maintain a rhythm. Now, having said that,
16 submariners are free to take their own
17 supplements, pills, and a lot of them do. A lot
18 of them will take Creatine, they'll take
19 vitamins, any number of other preparations,
20 that's not uncommon. And I have no doubt
21 probably some of them have taken Melatonin, but
22 we don't have it as a policy. For sleep
23 deprivation, our recommendation is caffeine-- you
24 know, drink coffee. We really don't push a lot
25 of drugs to maintain readiness or improve

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1 performance.

2 COL. UNDERWOOD: Paula Underwood. How
3 do you deal with wastewater and human waste, tell
4 us that?

5 CDR. HORN: The head facilities are
6 the same as you would see on other surface ships.

7 Sanitary waste goes into holding tanks, and then
8 periodically emptied. Wastewater, again, just
9 leaves, it goes into tanks and then is later
10 flushed out of the boat.

11 If you ever ride a submarine underway,
12 there is a large valve that needs to be closed
13 after you finish using the head. If you empty
14 the head after you finish using it and the
15 sanitary tank is pressurized, the contents of the
16 tank will not go into the ocean, they will come
17 out into your face. So that's one of the things
18 you have to remember when you ride a submarine.

19 (Simultaneous discussion.)

20 DR. OSTROFF: Are there other comments
21 or questions? Yes.

22 CAPT. EMERSON: Maura Emerson. I'm
23 from the Military Sealift Command, and so
24 although I'm in uniform, a majority of my
25 constituents are civilians, contractors. My

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1 question is, my understanding is that aboard your
2 vessels, that you have a number of civilian tech
3 reps, contractors, civilian scientists, who ride
4 sometimes for the duration of a mission. Do you
5 do medical screening for those folks?

6 And then my second question is, do you
7 track medical events or Medevacs that may occur
8 because of medical conditions that befall that
9 population?

10 CDR. HORN: These individuals are
11 screened, very rigorously if they are going to be
12 on the boat for longer than one day. Most of the
13 rides that the contractors and civilians will go
14 on submarines for are very short duration, a
15 matter of a few days, a week or two, and they are
16 usually on the coast here in the U.S. They are
17 not deployed overseas or anything.

18 So, basically, if they are going to be
19 on for a week or two, they do get a rather
20 rigorous screening that also includes information
21 from their regular physician and, if we have to,
22 we'll do a physical on them if their work
23 requires them to do that. But the bottom line
24 is, yes, they are screened. And if they do have
25 conditions that are prohibitive, then they get a

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1 really hard look at how essential is their
2 getting underway? And we've had to tell
3 civilians that their medical problems are such
4 that they can't get underway, and a lot of times
5 that has career implications -- you know, things
6 like the ice pilots who go in the submarines
7 under the ice, those sorts of things, have to
8 meet rigorous qualifications.

9 DR. OSTROFF: One last question and
10 then we'll -- well, two questions, and then we'll
11 go to our break.

12 DR. CAMPBELL: The way I see a
13 submarine dive is it's basically a saturation
14 dive, you're down there for weeks on end. How do
15 you deal with problems of the bends and
16 decompression problems in things like a rescue
17 where you have to be pumped out of the submarine
18 and, when you surface, how do you deal with
19 decompression issues?

20 CDR. HORN: Well, for submarines,
21 normally they operate at one atmosphere plus-or-
22 minus -- you know, a few millibars one way or the
23 other of a standard one atmosphere pressure.
24 Over time, you don't incur a saturation
25 decompression obligation unless you've been

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1 pressurized to a depth equivalent of greater than
2 23 feet of seawater. So it's not an issue
3 ordinarily for submariners.

4 Now, in a trapped submarine, there is
5 invariably some degree of pressurization in the
6 boat. That's been true of every submarine
7 sinking that's ever been investigated. And those
8 individuals do require a saturation
9 decompression, and that's been a significant
10 problem that we've worked on over the years.

11 I didn't cover that on the slides, but
12 a submarine rescue is going to require almost
13 invariably, we feel, a decompression of the
14 people who were rescued. They may come out
15 looking fine and then we've got to put them in a
16 chamber to keep them from dying from the bends.

17 DR. OSTROFF: One last question.

18 DR. LAUDER: I just had a question,
19 interest question, going along with the human
20 waste. What about water use for hygiene and
21 bathing and what are the regulations for that? I
22 would assume that would play into how much you
23 exercise.

24 CDR. HORN: That is an issue, and the
25 biggest issue is how do you deal with the dirty

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1 linen. That's a challenge to the crew to keep --
2 the most important piece of equipment is the
3 washing machine and the dryer. But water is
4 generally -- potable water is not a problem. The
5 boats make enough water that there is ample
6 enough. Now, the sailors do use Navy showers,
7 which is a greta way to save on your home heating
8 bill, by the way -- you know, just a little
9 squirt of water, clean with soap, wash, and a
10 little rinse-off later. But there's ample water
11 onboard for washing three times a day, if you
12 have to. But certainly, yes, sanitation is an
13 issue.

14 DR. OSTROFF: Cdr. Horn, thank you so
15 much. It's very interesting. I'm sure the Board
16 members will be quite interested and curious to
17 actually get onboard, and I'm sure we'll have a
18 lot more questions after we've actually seen
19 things.

20 What we'll do now is we'll go to our
21 break. The break will be 15 minutes. I have a
22 feeling that in the subsequent sessions we'll
23 probably get a little bit behind because there's
24 a lot of things to cover. So, why don't we take
25 our break a little bit early and try to come back

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1 at a quarter to 10:00. Before we break, let me
2 turn it over to Rick to see if he has any
3 logistical comments to make.

4 COL. RIDDLE: I forgot to tell you
5 where the restrooms are, but they are right
6 outside the door.

7 CDR. HORN: One thing I would mention
8 for the presenters, you may want to come by and
9 look and familiarize yourself with the remote
10 here. Advancing the slides is the left click
11 button marked "Menu" on top. If you need to go
12 back a slide, hit the right click button "Enter",
13 and then maneuver the pointer to the previous
14 slide in the text box. There's a laser pointer
15 here marked "Laser", and you maneuver the pointer
16 with the little keypad here.

17 DR. OSTROFF: Thanks again.

18 (Applause.)

19 (Whereupon, a short recess was taken.)

20 DR. OSTROFF: Why don't we go ahead
21 and get started. We have one question that's
22 before the Board, and we do have Ms. Lynn
23 Pahland, who managed to make it up here. I was
24 told earlier this morning that you didn't think
25 that you were going to be able to make it because

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1 of the impending hurricane, but it's good to see
2 you.

3 She is from the Office of the
4 Secretary of Defense for Health Affairs, and she
5 is going to present the Question to the Board on
6 Population Health Improvement Metrics, and the
7 slides that she will be using are in Tab No. 3.

8 Before you get started, let me just
9 point out someone might want to try to get a copy
10 of today's New York Times because there's a long
11 story in there by Larry Altman on the Malaria in
12 the Marines. So we may want to try to get a copy
13 of that to see what he had to say.

14 MS. PAHLAND: Nice to see you all
15 again. It was an interesting trip up here -- 11
16 and a half hours. Can't wait to go back in the
17 hurricane. I also have a house that used to be
18 right in the eye of the storm. The eye of the
19 storm is going to go right over my supposed
20 retirement home in Dare County in North Carolina.

21 (Slide)

22 I've been at Health Affairs for seven
23 years, and I know a million years before that the
24 main focus of what we've been trying to do is to
25 identify methodologies to ensure that the Armed

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1 Forces are as healthy and as fit as possible at
2 all times. And then we have other beneficiary
3 groups for whom we're responsible.

4 It's been a challenge to put the
5 appropriate policies and procedures into place
6 somewhat because of the fact that we have three,
7 four, five, six different military health systems
8 or services, and then also we have to look at the
9 Department of Defense, especially -- across-the-
10 board -- especially in this era of joint types of
11 operations. So I think we're moving more and
12 more toward trying to look at health status and
13 interventions and assessments from a DOD
14 perspective, notwithstanding that the services
15 have every responsibility to look at their
16 populations the way they see fit. But this
17 question is more from the perspective of the
18 Department of Defense and how we can assess,
19 intervene and improve the health status of our
20 populations.

21 Our populations, as I mentioned, are
22 very much, and most important, the Armed Forces,
23 and then we have other beneficiary groups for
24 whom we are responsible. We have a health care
25 system, and then we have other civilian

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1 employees, but primarily right now we're looking
2 at our Armed Forces, a big focus on population
3 health but, again, we're also interested in the
4 identification of procedures and methodologies to
5 assist individuals in improving their health
6 status, and then maintaining a good health
7 status.

8 (Slide)

9 The question is in the book. What we
10 are looking for from the Office of the Assistant
11 Secretary of Defense for Health Affairs -- mainly
12 Dr. Tornberg -- in the area of clinical and
13 program policy is for the Board's assistance to
14 help us to identify and implement appropriate
15 performance measurements and metrics for the
16 Military Health System to assess and quantify
17 improvement of individual and population health
18 status.

19 One of the things that we're all aware
20 of, who work for the services or who work in
21 Health Affairs, is that we've got many, many,
22 many systems and metrics and performance
23 standards that we're using, but it is difficult
24 for us to get our hands wrapped around that and
25 get useful information, especially from the

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1 perspective of the Department of Defense.

2 We also would like to have your
3 recommendations on how we can best engage
4 individuals for the shared responsibility for
5 their health. That's a pretty global question,
6 and to narrow it down a little bit, one of the
7 things that the Health Affairs Office is looking
8 at is the instrument such as the Health
9 Enrollment Assessment Review System, a health
10 risk appraisal, the assessment sheets that are
11 used in the Air Force when you come in for your
12 annual review. We're trying to identify or
13 looking for your recommendations to help us
14 identify if there is a methodology that we can
15 use where you have that individual relationship
16 with someone and you can identify their risks or
17 you can identify intervention points. They are
18 the questions.

19 DR. OSTROFF: Thanks very much. Let
20 me ask if there are any questions before we turn
21 it over to Col. Woodward.

22 (No response.)

23 Kelly?

24 COL. WOODWARD: Good morning,
25 everyone. I'm Col. Kelly Woodward, from the Air

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1 Force Surgeon General's Office, and I'm going to
2 just talk a little bit about population health
3 improvement in the Military Health System and a
4 little bit on some concepts as I see them
5 regarding measuring health.

6 (Slide)

7 I would like to suggest early on that
8 it is very important that population health
9 improvement be viewed as a purposeful endeavor
10 and that it has to be measured or it won't get
11 done, and that it has to be delivered, and we
12 have to step out with a planned way to do it and
13 have a systematic use of measures or we'll never
14 get there.

15 (Slide)

16 The Military Health System has been on
17 a long journey over the last 50 years, and how
18 we're organized and what we do to impact the
19 health of our populations. I would suggest that
20 prior to the mid 1990s, the prior 50 years for
21 DOD health care was really building a casualty
22 treatment capacity that had the focus on
23 operational forces and ensuring that they were
24 fit, but really was really standing by waiting
25 for them to be sick or injured before we would

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1 intervene on their health because we had this
2 presumption of fitness and, in fact, for our
3 other beneficiary populations, family members and
4 retirees, we were not at all organized to
5 actually improve their health.

6 We, in fact, had a very supply-sided
7 system wherein literally it was space-available
8 care and the whole management structure was how
9 to efficiently utilize the space you had
10 available, which is far different, in my opinion,
11 than where we are now, which is wanting to focus
12 on how do we actually improve the health of our
13 communities both for the sake of supporting the
14 military mission as well as improving the health
15 of our other beneficiary populations, and I think
16 it's a fundamentally very different thing and
17 it's a very difficult journey.

18 We are under a lot of pressure to
19 maximize efficiencies and have a lot of budget
20 pressures, like every health plan, and so a lot
21 of emphasis is on how to save dollars. Well, I
22 would suggest that that doesn't necessarily
23 equate to how to improve health and, in fact,
24 they are, of course, clearly sometimes in
25 conflict. And so we need to take on very much a

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1 population health improvement strategy that looks
2 at probably acknowledging the fact that we have
3 to be efficient, but if we focus on value where
4 the numerator is health or health outcomes as a
5 measure, and the denominator might be dollars or
6 whatever, then we might be more successful, but
7 population health improvement is really about
8 measurable improvements in health status.

9 And I would also say that I don't
10 think a health system that focuses on clinical
11 services should necessarily expect to have
12 improvements in health be a byproduct. It's not
13 a given that if you just deliver a lot of health
14 services, the health of your population gets
15 better.

16 (Slide)

17 And, in fact, I would say that you
18 have to be a believer to be in the population
19 health improvement business. You've got to
20 believe that we can actually improve the health
21 of our populations. We can do it deliberately --
22 and this is what the question for the Board is
23 all about -- we can do it measurably. And I
24 think if you don't believe that, we've got a
25 fundamental problem.

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1 (Slide)

2 We have over the last few years
3 captured somewhat of a framework for population
4 health improvement in the Military Health System
5 that includes, first and foremost, a systematic
6 approach to community health, modeled a little
7 bit after the Healthy People 2010 Initiative, and
8 the systematic approach would include aligning
9 plans and programs with the mission and goals of
10 the MHS, including vision and goals for health
11 status, and then measuring that improvement.

12 We have in the military a unique
13 combination, I think, of occupational health
14 issues, of public health capacity, as well as
15 clinical capacity, and those things all need to
16 come together in a systematic approach to improve
17 health because, as we all know, it's not --
18 again, as I said earlier, I don't think it's just
19 the clinical services where population health
20 improvement is going to be derived. A lot of it
21 is from public health activities, from
22 occupational and community-based programs, and
23 they all need to be in an integrated way to
24 achieve population health improvement.

25 We also need to build a capacity to do

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1 this. I think we have seen programs come and go
2 that address community-based issues, or worksite
3 issues, or occupational health issues, and at the
4 same time, at the expense sometimes of our
5 community programs, we've bolstered clinical
6 programs that may have different effects, so I
7 think there's a balance there of these various
8 programs, and we need to build the right capacity
9 in a systematic way.

10 And then, finally, we're in the
11 process of organizing our health information not
12 around the health plan, not around the capacity
13 as much as around the individuals and
14 populations. In other words, what is the
15 information reflecting the health of those
16 populations, and how are we managing and
17 utilizing that information vice information for
18 how many providers we have, what's their average
19 time in the military -- and those are important
20 underpinnings, but those aren't measures of our
21 success in population health.

22 (Slide)

23 This is a schematic from Healthy
24 People 2010, understanding and improving health.

25 That basically just shows the iterative process

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1 for health improvement and for deliberately
2 improving health. Certainly it's very important
3 to have goals and objectives. The goals and
4 objectives ought to somehow reflect major health
5 problems as identified by the organization, that
6 lead to goals and objectives, that then lead to
7 the interventions that are based on the
8 determinants of health. What are the things that
9 impact health status, and are we targeting those
10 things with our programs?

11 So, coming down this side, we would
12 deliberately plan and program to improve health
13 status. And coming up this side, we would
14 measure our health status and feedback into the
15 next iteration of our programs to improve health.

16 So this is from Healthy People 2010.

17 (Slide)

18 It's nice to have goals. I think that
19 the Military Health System needs to take the
20 model from like Healthy People 2010 where
21 certainly there's no shortage of health
22 objectives in Healthy People 2010, 460-some
23 objectives, and no single plan or organization
24 would set out to address all of them, but the
25 idea of having objectives and goals that you can

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1 base our programs on I think is very important,
2 and those ought to link up with our health
3 measures.

4 One of the goals for the military, not
5 just to increase quality and years of healthy
6 life, but also to increase mission capability,
7 provide a more fit and capable and healthy
8 fighting force.

9 (Slide)

10 There are some basic principles to
11 population health improvement, and I think these
12 get to be very important when we start talking
13 about the question before the Board for what are
14 the measures that we need.

15 First and foremost, we have to
16 obviously explicitly identify the populations
17 that we're targeting, and in the military
18 community we have many different populations. We
19 have submariners, as we just heard about, a very
20 unique population. In the Air Force, we have
21 fliers, an equally unique population. We have
22 other military active duty, Guard, and Reserve,
23 but then we also have our beneficiary population
24 and retirees, all different populations that in
25 different situations for different health

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1 problems may require different measures. Some
2 may be able to utilize the same measures, but I
3 think we have to define the populations clearly.

4 We have to use applied epidemiology,
5 and by that I really mean descriptive
6 epidemiology, cause and distribution of disease,
7 not experimental epidemiology.

8 We have to use evidence-based
9 interventions. Whatever we're measuring ought to
10 reflect what evidence suggests will improve
11 health outcomes.

12 And then, finally, we have to measure
13 it. Population health is certainly something
14 that, if it's not being measured, it may not get
15 done. But I would suggest maybe over the last 100
16 years we've made a lot of improvements in
17 population health without measuring a lot of
18 different things we were doing, but I don't know
19 if we're at that stage anymore where we can
20 expect those good outcomes without measuring and
21 purposefully setting out to achieve them.

22 (Slide)

23 Again, as I mentioned earlier, just
24 think about the populations that we need to
25 measure very explicitly. If we're targeting

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1 Active Duty, Guard and Reserve, we need to define
2 those populations very clearly, measure the right
3 things in those populations relevant. Things in
4 those populations are prime enrollees are people
5 who have a contractual sort of obligation, if you
6 will, to provide some services for, and then the
7 larger community on the installation and the
8 surrounding community I think we have an interest
9 in the populations around there.

10 And then most importantly, I think,
11 when we define the populations, the populations
12 have to be able to -- we have to link those
13 populations to people who can impact the health
14 of those populations. And that might seem like a
15 foregone conclusion, but I don't think it's the
16 case. We measure lots of things and never ask
17 who could actually impact that measure. And if
18 we haven't kept that in mind, the measure may be
19 very ineffective.

20 (Slide)

21 This schematic just describes the way
22 I think we ought to look at our health measures,
23 looking at priority health problems in the
24 Military Health System, identifying risk factors
25 and factors that contribute to risk factors, and

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1 then lining those up with interventions -- and
2 I'll talk a little bit about how I would see that
3 we ought to measure some of these things, and
4 I'll start with the priority health problems in
5 the military. And, again, if you start with
6 different populations, it's different things for
7 different populations. Active Duty military
8 suicide is probably one of the leading problems.

9 Deaths from motor vehicle accidents and other
10 injuries are very high.

11 Some chronic diseases are less of a
12 problem in that military population than in, say,
13 our retiree population, so we have to just
14 identify the health problems for the specific
15 populations and then work backwards to come up
16 with the things we ought to be doing to improve
17 health.

18 (Slide)

19 It's extremely important, I think,
20 that as we think about measures, that we think
21 about measuring things that are associated with
22 interventions that are proven to impact outcomes.

23 So, whether it's clinical preventive services,
24 community preventive services, practice
25 guidelines that have been shown to lead to

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1 desired outcomes and improvements in health, we
2 need to focus on those, and that is what I would
3 call "doing the right thing" efficacy.

4 And then we have to have an eye to the
5 reality that like any organization, we have to be
6 fiscally responsible and responsible with our
7 resources, so we also have to look for
8 efficiencies, and there are right ways -- there
9 are sort of evidence-based efficiency models for
10 how to do things right.

11 (Slide)

12 Finally, and most importantly, the
13 long pole in the tent in my mind is how we use
14 the information to systematically and iteratively
15 feed back how we're doing on improving health,
16 back to the people who are stakeholders in our
17 population health improvement strategy.

18 We need to, again, start with
19 enterprise-level goals and objectives. They need
20 to cascade down all the way through the
21 enterprise. So we can't have goals in Washington
22 and expect people in California to be doing what
23 we think is important, if we haven't cascaded
24 down to the people in California what the
25 Military Health System thinks are the important

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1 priorities. So it has to cascade all the way
2 through the system, and then we have to plan our
3 resources accordingly, and then we have to
4 measure accordingly -- roll the measures up from
5 the lowest levels, aggregate them up to
6 systemwide measures, and then feed back all the
7 way to the deck plate and, finally, periodically
8 reassess and reprioritize what we're doing.

9 (Slide)

10 Now I'm going to talk specifically
11 about some health measures. I think there are a
12 couple of success factors for population health
13 measurement. One is the portfolio of measures --
14 in other words, what is the collection of things
15 that we're measuring. And, again, as I said
16 earlier, they have to reflect the priorities of
17 the enterprise and, also, they have to be
18 actionable. By actionable I mean somebody out
19 there has to be able to say "I need to turn left
20 here to do better". If that doesn't happen, then
21 it will be haphazard and it's a little bit like
22 "If we know not where we're going, it matters not
23 how we get there". So somebody has to know how
24 to act to improve that measure, and that's really
25 critical.

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1 Also, then we have to systematically
2 utilize the measures. So we have to collect the
3 information, analyze it, interpret it,
4 disseminate it, and discuss it in a performance
5 improvement process. And those are the two what I
6 would call success factors for measuring
7 population health.

8 (Slide)

9 There are many types of measures, as
10 you all are aware, and this is one depiction of
11 what are considered outcome measures, process
12 measures, and structure measures.

13 Health outcomes would be, for example,
14 lung cancer mortality. Intermediate outcomes
15 would include things like risk factors and things
16 that contribute to the risk factor. And then
17 processes might be things like what is actually
18 done, what kind of policies are in place, are we
19 actually providing nicotine replacement, are we
20 providing counseling? Those are actually
21 processes of care that are some of the many --
22 for smoking, for example, that would directly
23 relate to smoking rates. And I think if your
24 outcome is lung cancer deaths, you can start to
25 say "Well, where are the interventions", and you

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1 can back this up and decide what we ought to be
2 doing. And then you'd ask yourself "Do I want to
3 measure lung cancer deaths, or do I want to
4 measure what's actually being done that people
5 could actually take action on?" As a clinician,
6 I can probably intervene on someone who has lung
7 cancer, and I can intervene one-on-one with
8 patients to reduce their risk, but that's clear
9 back here.

10 There are other ways, I think, to
11 stratify this, and I don't know that this is the
12 only way to look at health measures, but I think
13 of them as outcomes, processes and structures.
14 And I think it's very important to clarify again
15 that risk factors are considered by many to be a
16 type of outcome measure, an intermediate outcome.

17
18 (Slide)

19 Now this table is a little hard to
20 see, but in Tab 3 I inserted a full-page slide of
21 this and three other graphs that I'll show you,
22 but I really just wanted to use this to make a
23 point, that you can start to line up health
24 measures under this rubric of Outcomes, Processes
25 and Structures and, for example, in morbidity and

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1 mortality and risk factors are considered health
2 outcomes.

3 Process of care would include things
4 like provision of preventive services, acute care
5 services, disease and condition management, and
6 what have you. Structure measures would be
7 things such as how many physicians or health
8 providers are in a community. That would be, in
9 my mind, a structure measure, but then there are
10 some examples on the right side. And I just put
11 that in there for you to have as you think about
12 measures and want to have a systematic approach
13 to developing a set of measures.

14 (Slide)

15 I think, again, one of the critical
16 factors for progress in health improvement is to
17 have a portfolio of measures that reflects
18 priorities of the Military Health System and that
19 are actionable. And what I want to do is just
20 talk about what I consider some of the criteria
21 for you to consider as you address the question
22 before the Board. Most importantly, I think the
23 measures have to be relevant to a specific
24 population.

25 So, if we're measuring health issues

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1 in submariners who are for the most part under
2 age 40 -- I think mammography rates may not be
3 particularly relevant for that population, but
4 other things might be very relevant, so I think
5 they just need to be relevant to population.

6 As I mentioned earlier, they need to
7 be linked to proven interventions that target
8 outcomes of interest. Most importantly, they
9 have to be measures that are actionable to "deck
10 plate", somebody down there who is in the face of
11 the community, who has got access to the
12 community of interest, needs to be able to take
13 some action on that measure. And part of that is
14 also to be reasonable with the measures and be
15 able to measure some change over the course of
16 one to two years.

17 I think inspecting Mountain Home Air
18 Force Base in Idaho to measure their breast
19 cancer mortality and see any change in the coming
20 decade is very unreasonable but, if you want to
21 see them improve their mammography rates, that
22 might be very reasonable. So we need to think
23 about that, over what time period would they
24 expect to see a change.

25 A couple of important points, "Nice to

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1 haves". What I consider "Nice to have" is
2 ability to compare the DOD to other health
3 systems I think is important, but I think if we
4 go in with that as an absolute, we're going to
5 miss the opportunity to do some health
6 improvement. For example, HEDIS measures, which I
7 think we're very much in favor of, we've had a
8 struggle about do we measure it exactly the way
9 HEDIS defines it, or do we measure it in what
10 we're calling kind of a HEDIS-like thing which is
11 applicable to the way our population operates,
12 and I would suggest that the latter might be more
13 important because, in fact, for us to improve and
14 achieve the things we want to achieve, HEDIS-like
15 measures where we vary the formal to actually be
16 able to get it done in our system might be very
17 important and might be more important than being
18 able to compare it to the rest of the nation.
19 That's my opinion.

20 The other thing is, while it's
21 important to look for automated tools, I think we
22 shouldn't set out to say the only measures we
23 should have are those things that are automated.

24 We will again miss the opportunity to actually
25 improve health. We'll have lots of measures, but

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1 they may not improve health.

2 (Slide)

3 I think that we need to only use a
4 very select few Outcomes measures, and those
5 ought to be in the area of health-related
6 behaviors. So, health risking behaviors and not
7 too much emphasis on things like overall
8 mortality or chronic disease mortality.
9 Certainly, some injury mortality in what I would
10 call sort of more acute events -- neonatal
11 mortality, for example, is a relatively acute
12 thing that you can expect to see some reasonable
13 change in a short period of time -- but,
14 otherwise, chronic disease morbidity and
15 mortality maybe ought to not be the focus of our
16 measures for a system as actually trying to
17 improve health, but we ought to look more at
18 processes that actually contribute to those
19 positive outcomes that we want. So, again, link
20 them to proven outcomes such as our emphasis on
21 U.S. Preventive Services Task Force and some of
22 the health measures in HEDIS which we are looking
23 at.

24 Finally, I think that whatever
25 portfolio of measures we have is going to require

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1 a combination of tools. Some of them are going
2 to be automated -- and I'll show you some things
3 we have in the system now -- but some of it's
4 going to require surveys, some of it's going to
5 require special studies with sampling
6 methodologies, and there's not going to be --
7 there's no sort of simple fix for the measures we
8 need to improve the health of a big, diverse and
9 dispersed population like the military.

10 (Slide)

11 Again, just to emphasize that if we
12 measure processes and structures, they need to be
13 linked, clearly linked to the outcomes that we're
14 trying to get to, but I think the emphasis ought
15 to be on process measures, for the most part.

16 (Slide)

17 One nice example is the Air Force data
18 for pregnant women, the proportion of pregnant
19 women who receive prenatal care in the first
20 trimester, which is also a HEDIS measure, and
21 found that in one study period two-thirds of the
22 women had received prenatal care in the first
23 trimester, and there is some evidence to suggest
24 that early prenatal care does positively impact
25 pregnancy outcomes. So we can measure this

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1 process. We can measure it at the enterprise
2 level. We can cascade it all the way down to
3 Kelly Woodward's clinic -- did you get your
4 pregnant women in last quarter for their first
5 prenatal visit in their first trimester? If not,
6 what are you going to do to fix it? So a
7 reasonable process measure that links to
8 outcomes.

9 (Slide)

10 Now I want to just talk a little bit
11 about the status of some measures, and this is
12 merely to give you an example of some of the
13 points that I'm touching on.

14 We did an analysis back in 2001 of
15 what population health measures were in the
16 Military Health System at that time, and what we
17 found is, as Lynn mentioned earlier, there are a
18 whole bucketload of measures and things going on
19 in the Military Health System that -- it's not
20 that we are new to this, it's just that we're
21 needing your help to perhaps refine our approach
22 -- but we have a lot of things that are being
23 developed and have been developed, however, there
24 aren't many measures that are available
25 enterprise-wide all the way from the enterprise

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1 in the DOD-wide view all the way down to the
2 clinic level so that somebody could act on it. A
3 lot of our measures are outcome measures. We're
4 in the process of developing more process
5 measures, and the biggest problem I think is
6 we're not doing as well as we can in
7 systematically analyzing and disseminating the
8 information and developing a performance
9 improvement process within the Military Health
10 System.

11 (Slide)

12 Now, this is the first of three
13 slides, which I don't expect to go into the
14 details, but I put these hard copies in there
15 just to give you an idea of how all the kinds of
16 things we have measured and have been measuring
17 in the military -- and this is a list of a bunch
18 of outcome measures, and you can see that we have
19 all kinds of things being measured at the
20 Military Health System level, some of the
21 information -- this column -- some of it is
22 stratified down to the installation level, and
23 then the services have their own programs. And
24 this is a couple of years old, so the point is
25 not that this is necessarily the exact status,

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1 but it just shows you there's a whole lot of
2 things that we have been measuring in the
3 Military Health System in the area of Outcomes.
4 What's important to note is many of these
5 measures are -- where it says here is talking
6 about the Health Evaluation Assessment Review
7 where a couple of years ago our hopes were that
8 we would have a health assessment tool that would
9 give us information about certain behaviors;
10 otherwise, we don't have a real good source that
11 could be stratified all the way down to the
12 installation level for a lot of these measures.
13 So, I provided you a copy of this just for you to
14 look at.

15 (Slide)

16 Process measures, again, we have a
17 whole lot of processes that we measure, some of
18 which may be desirable, some of which really may
19 be of lower importance, but things -- I'll just
20 make a note about immunization rates, an
21 excellent thing to measure. Some people would
22 debate whether immunization rates are really a
23 process or outcome. Since they are such a close
24 surrogate to immunity, they could be viewed more
25 as an outcome, but it's clearly a process to

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1 immunize somebody, and somebody at the "deck
2 plate" knows what to do. If their immunization
3 rates are low, they immunize people. So that's a
4 good measure.

5 So you see the services have lots of
6 different measures that they've developed. DOD
7 has lots of measures that it's developed, some of
8 which are systematically used, some of which are
9 not, but just to give you an example of some of
10 the things we've been doing.

11 (Slide)

12 And, again, we have some structure
13 measures which I don't want to dwell on. On that
14 fourth piece of paper I gave you, again, the
15 full-size sheet in your packet, the legend is on
16 that third sheet, just describes what I was
17 trying to depict in this analysis. So I'm happy
18 to talk with you about this, but I just wanted
19 you to see the point here, that we have a lot of
20 measures. We have some redundancy. We don't
21 necessarily have a systematic use of all the
22 measures we have -- and there have been
23 improvements since this analysis in 2001, and Dr.
24 Opsut will probably talk a little bit about where
25 some of that is, but these are just some of the

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1 many, many things we've been measuring.

2 (Slide)

3 So, what I would recommend is that the
4 Department of Defense adopt a systematic use of
5 health measures that starts with basically
6 periodically summarizing the health of military
7 populations, almost like the health of the United
8 States is published by the National Center for
9 Health Statistics, where we ought to be able to
10 look at periodically, in some sort of formal
11 report that answers questions that are of
12 importance to the military -- what does our
13 population look like? What does our Active Duty
14 population, what does our Reserve and Guard
15 population look like, our military beneficiaries?

16 Then we need to establish a portfolio of
17 actionable measures -- and, again, I think we
18 ought to emphasize risk factor and process
19 measures.

20 I think we ought to balance our
21 portfolio on what we need to measure, not what's
22 available necessarily. Sometimes the two match,
23 but if the right question is to measure X but we
24 have a convenient measure that measures Y, I
25 don't know that we should default to Y, and we

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1 ought to maybe build the measure that we need,
2 even if it's a little more expensive, if it's
3 really about improving the health of our
4 population.

5 And then, most importantly, we need to
6 regularly collect, analyze, interpret and
7 disseminate the information, and then plug that
8 into a performance improvement process that
9 cascades from the leadership all the way down to
10 the action at the clinics, and we have been on
11 this journey in the Air Force.

12 Just to tell you our experience -- we
13 have a regular Performance Improvement Process
14 Board in the Air Force that cascades from the
15 Surgeon General down to clinics, and we look at
16 some of these things. Particularly, some of the
17 clinical preventive services and immunization
18 rates are two examples that we've been engaged in
19 for quite some time, where regularly the Air
20 Force Surgeon General has a meeting with the
21 intermediate service commands and they look at
22 these measures and say who's doing well, who's
23 doing poorly, who improved, who got worse and
24 why, and then those intermediate service commands
25 are expected to have discussed it with their

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1 military treatment facilities and say "Here's
2 what we're going to talk about, about the
3 measures, about your installation, what's going
4 on, what are you doing about it", and it's a very
5 effective process, and it's all the process of
6 continuing to improve our performance and it's
7 cascade of measures rolled up from the clinic
8 level, from the provider level where "Kelly
9 Woodward, you're responsible for these patients,
10 how are you doing", and move all the way up to
11 how is the Air Force doing on that same measure,
12 and then feedback rolls all the way back down.
13 So, it's a very effective process.

14 (Slide)

15 So, in summary, population health
16 improvement, as you all know, requires a
17 systematic approach. It's not going to happen by
18 accident. It's not easy to do, by any means, but
19 it's necessary. And we do have a lot of measures
20 in the DOD. With your help, I think we can
21 perhaps organize those a little better, refine
22 them, and perhaps get some emphasis behind what
23 needs to be done to systematically use those
24 measures to improve the health of our populations
25 and actually demonstrate it.

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1 (Slide)

2 So, with that, I'll take any
3 questions.

4 DR. OSTROFF: Thanks very much. Why
5 don't we open it up to some questions and
6 comments.

7 DR. FORSTER: Jean Forster. I notice
8 that there's a disconnect between the current
9 Outcome Measures and the current Process
10 Measures. I mean, I'm not sure if they were each
11 just a sample, but the process measures are very
12 clinically oriented, and the outcome measures
13 speak to behaviors and risk factors that are not
14 necessarily easy to change in clinical settings.

15 COL. WOODWARD: You're correct, and I
16 think that's part of my -- my belief is we need
17 to recognize that if, for example, we want to
18 impact some health outcomes like lung cancer, the
19 big lever may not be in the exam room. A piece
20 of the lever might be in the exam room, but the
21 big lever might be community-based programs.
22 Worksite -- I think some people have suggested
23 that worksite policies restricting where people
24 can smoke has had maybe as big, or bigger, effect
25 on smoking rates than providers advising people

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1 about smoking. So, our measures are a lot of the
2 clinically-based measures, these are what have
3 sort of grown up over the years in a system that
4 our health system was built as a casualty
5 treatment system to treat sick and injured
6 people, and to improve their health and actually
7 be much more of a public health model may take a
8 reorganization of our health system, and
9 reprioritization.

10 DR. FORSTER: So to follow up on that,
11 you're not limiting yourself to measures that
12 measure clinical kinds of activities. For
13 example, the Community Preventive Task Force,
14 whatever that is, one of those, they are issuing
15 a whole set of community-based guidelines on a
16 regular basis, and you would be open to those?

17 COL. WOODWARD: I believe that the Air
18 Force -- we have actually engaged our bigger
19 community besides the medical community, in how
20 to improve health. We have a Community Action
21 Board that's actually run by the line leadership
22 of the Air Force. We have an integrated delivery
23 system that brings in the community impacts. And
24 I would argue that the military, because we
25 actually have a more integrated community system,

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1 if we focused on some of the capabilities there
2 and actually built capabilities there, we could
3 have sweeping effects on the health of military
4 populations that we won't have by focusing on
5 just the exam room. And I would say that that's
6 a -- I don't know if that's the enterprise view,
7 that's Kelly Woodward's view. I would say, for
8 example, smoking intervention is a really good
9 example. Over 30 percent of Active Duty military
10 smoke, far above the national average. It ought
11 to be considered a major problem in the military
12 -- and it is -- but the action may not be to just
13 get everybody into an exam room. That is
14 probably not the most important intervention and,
15 in fact, smoking cessation -- I don't think we
16 have the right capacity, nor have we resourced
17 the capacity, to actually help people quit
18 because we're expecting maybe one-on-one
19 intervention with a provider, who may or may not
20 have been trained in it, to somehow do that.
21 Maybe there are other venues where we should
22 build capability, but we haven't resourced
23 accordingly. So I think if the measures of quit
24 rates are something that we want to measure that
25 may be pointing to an intervention in a community

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1 rather than a clinical venue, I think that's fair
2 game.

3 DR. LAUDER: I have a question and a
4 comment, and it may be premature at this point,
5 but it seems like a lot of what we're discussing
6 right now is kind of going back to the question
7 we were asked last time that had to do with
8 physical exam, the use of the physical exam in
9 the Active Duty. And I think amongst that
10 discussion came out a lot of concern about the
11 military populations in general, including
12 Retirees, et cetera, and Tricare constituents.
13 And it seems like it all kind of stems back to
14 what kind of information do we need to get, and
15 that's kind of the primary issue. And then does
16 that need to be standardized, first and foremost,
17 and then what do we do with that information.
18 And it seems like there's two tiers. It seems
19 like there's almost a preventive tier and a
20 problem-related tier because of the differences
21 in age. You're going to have very standard
22 issues where maybe you could tobacco prevention
23 in a younger population early on, you may be
24 dealing with the problem of lung cancer in the
25 older population.

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1 So, I think it has to kind of stem
2 back from what information do we need first and
3 foremost, and then what can we do with that
4 information. And, clearly, you want more
5 information than you have outcome measures at
6 this point in time because ten years down the
7 line there may be different outcome measures that
8 we can make differences in problems where we
9 maybe can't do that now.

10 So I don't see it being very different
11 than that original question, and it seems like we
12 could relate it all as a DOD issue right off the
13 bat, and change the whole, I think, milieu of
14 thinking.

15 COL. WOODWARD: I certainly agree. I
16 think it's not going to be as simple as just have
17 a portfolio of measures that easily fits the
18 entire spectrum of issues that the DOD might have
19 in our complicated population. Also, I think
20 it's going to be a work-in-progress continually,
21 and so I think the biggest emphasis is to get
22 started on meaningful measures, knowing that over
23 time they'll change, we'll improve, we'll get
24 better at it, but if we don't start and we don't
25 use them systematically and purposefully, again,

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1 I guess I would say we'll end up wherever we're
2 going to end up, by chance rather than by
3 purpose. And so systematically using them, even
4 if they're imperfect, might be the best step.

5 DR. OSTROFF: David, and then Dr.
6 Brown.

7 DR. ATKINS: Well, first, I want to
8 compliment you on putting this issue forward and
9 doing a nice overview of some of the challenges.

10 I guess it would help me to get a clear picture
11 of what you want from the Board in terms of
12 taking this next step forward.

13 It would seem that one step is to
14 think -- come to some agreement on what we think
15 the critical sort of objectives are in the way --
16 like Healthy People came up with sort of leading
17 health indicators -- so come to some agreement --
18 all right, what are the risk factors that we want
19 to focus on, and do that first. And then think,
20 okay, what are the things that we would want to
21 measure to track our progress towards those
22 goals? And then the process of actually choosing
23 among measures -- you know, it's obvious you're
24 going to take people who know this stuff -- and
25 needs to weigh the challenges between the data

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1 that's available and the desire to be concordant
2 with other activities.

3 I do think it's important -- and I
4 heard your suggestion not to reinvent the wheel -
5 - and to the extent possible, produce measures so
6 you can compare how the military is doing to the
7 general population because, obviously, in some
8 places you're probably doing better and in some
9 places you're doing worse, and that's important
10 to know.

11 I think sometimes there are things
12 that you want to measure even if you think they
13 aren't really actionable, just because they're
14 kind of a warning flag, a warning sign of things
15 going on, and that you need to keep your eye on.

16 Maybe I'll let you just sort of
17 respond as to where you really want us to focus
18 our comments today as opposed to thinking about a
19 process that's going to take time to develop over
20 the next year or so.

21 COL. WOODWARD: And I'll respond to
22 that. First, as I think Ms. Pahlund suggested,
23 one thing that the Board might focus on is any
24 recommendations on how to utilize the measures
25 for the enterprise. How do we actually engage

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1 the stakeholders to get on the Performance
2 Improvement Process is one piece, and that might
3 be the overarching thing that is regardless of
4 the portfolio of measures.

5 Dr. Opsut will probably talk a little
6 bit about the process we already have in place to
7 a sort of Board process to consider measures and
8 to have a configuration, sort of control process
9 on our measures, that may help you to understand
10 kind of how we are trying to do this, how we're
11 trying to develop and utilize measures. But I
12 think that Ms. Pahland has suggested that if you
13 need to narrow it down, think about the issue,
14 for example, of some sort of a Health Assessment
15 Review. Do we need some tool to help us get
16 information on risk behaviors and that sort of
17 thing that we don't necessarily have a tool for
18 that right now that's systemwide.

19 DR. OSTROFF: Mark Brown.

20 DR. BROWN: Thank you. I have more of
21 a comment, or maybe there's a question in it that
22 sort of simulates really the last two comments,
23 and it has to do with the time scale, the time
24 scale that you're conceiving the idea of health
25 outcomes measurement, or you mentioned a health

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1 assessment review. And I guess I'm again thinking
2 of this from a VA, Department of Veterans
3 Affairs, perspective. I mean, it seems to us --
4 often we have the impression that when DOD gets a
5 new recruit, enlisted recruit person, that they
6 get them for a couple of years -- two, three,
7 four years maybe -- while they serve on Active
8 Duty, and then they separate from Active Duty,
9 and then the VA gets them as patients for the
10 next 50 years of their life. And the
11 reason that's important, I think, is, for
12 example, if DOD looks at that individual, that
13 enlisted soldier, I don't think -- speaking of
14 smoking cessation, for example, you're not really
15 concerned about lung cancer, I don't think. That
16 soldier isn't going to get lung cancer -- it's
17 unlikely they will get lung cancer while they're
18 on Active Duty.

19 We might see them when they develop
20 that lung cancer. I mean, smoking cessation does
21 have obvious implications in terms of immediate
22 health of that individual, their military
23 readiness, their ability to carry out their
24 mission.

25 My question is the perspective, when

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1 we're talking about these measurements and
2 thinking about things that can be preventive,
3 basic preventive medicine concepts, that it's
4 important to think of the time scale that you're
5 talking about. If you're looking at diabetes
6 risk factors, for instance, you're not worried
7 about somebody necessarily developing diabetes
8 when they're in their 50s, perhaps you're worried
9 about maybe immediate issues of obesity, for
10 example.

11 And I'm thinking that if you're
12 comparing what you're talking about to say what a
13 major health care system, let's say Kaiser
14 Permanente, does things like this. They worry
15 about trying to do preventive measures to keep
16 people healthy in the long-run -- you know, ounce
17 of prevention is worth a pound of cure -- and I
18 guess if there's a question in my comments
19 somewhere, it would be how would you compare what
20 DOD's interest would be in thinking about
21 measurements to think about better prevention
22 from the perspective of the length of time that
23 you have access to that person who is on Active
24 Duty versus, say, like your civilian counterpart
25 like a Kaiser Permanente? It seems like you'd

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1 have to answer something like that before you
2 start thinking about metrics or things that's a
3 measure. I guess I'm saying isn't the
4 perspective a little different because the
5 timelines are different?

6 COL. WOODWARD: My opinion is that we
7 have stated in the Department of Defense that we
8 are taking a life cycle approach to the health of
9 our military personnel from the time we access
10 them, with the possibility that many of them will
11 go on to retire and we will be responsible for a
12 good portion of their health care for the rest of
13 their lives. Admittedly, for certain
14 populations, the large majority don't stay in
15 beyond the initial enlistment, but we are still,
16 I think, aspiring to a life cycle approach, and
17 this Board has actually been involved in several
18 questions about pieces of that Recruit Assessment
19 Program where we actually get a very robust
20 assessment of their health at the beginning. We
21 have talked about, well, that ought to feed into
22 a recurring, ongoing assessment throughout their
23 time in the military, and maybe even beyond,
24 about what their health status is, and the Board
25 has commented on those issues as well as the

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1 issue of how do we periodically examine people or
2 do we periodically examine them.

3 But I agree our focus is on the
4 mission and what is impacting the mission, and
5 smoking -- for example, in the Air Force we did a
6 very clever study with actually smoking-related
7 illnesses in the military among Active Duty
8 people, basically bring down an Air Force Wing
9 full-time. In other words, the number of
10 smoking-related illnesses basically would -- you
11 could just take Lackland Air Force Base and just
12 basically wipe it off the map because that many
13 people are out-of-pocket, young people with acute
14 smoking-related illnesses.

15 DR. OSTROFF: Particularly these cases
16 of pneumonia in Iraq.

17 COL. WOODWARD: Yes. I think your
18 point is a very good one, and there's a need to
19 scope it that way, but I don't think we're seeing
20 it as limited to things that would be impacted
21 necessarily in the career time of a military
22 person, however short that might be. Do we want
23 to limit it to that?

24 DR. OPSUT: No. On the other hand,
25 I think what Kelly was saying when he said

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1 actionable number of years, it's not that you
2 don't care about lung diseases because we will
3 have that, but in terms of our performance, you
4 have to have something -- as opposed to the U.S.
5 tracking lung diseases as their performance
6 measure -- 30-year time frame and public health,
7 looking at that -- we need things that are, in
8 fact, actionable that, okay, what are we doing
9 that will affect something in 30 years, but that
10 we can talk about currently. I think that's the
11 different perspective here. We wouldn't
12 necessarily want to track what's our incidence of
13 lung cancer deaths because that's not actionable
14 right now.

15 DR. OSTROFF: We have a number of
16 hands, but one comment that I would make is that
17 it strikes me that there are a lot of big picture
18 processes that are going on that might
19 significantly impact some of the things that
20 we're talking about. And when you look at the
21 current way that we're using Reserve Forces and
22 we're using the Guard, and the desires on the
23 part of the Pentagon to try to shift a lot of the
24 support services over to the civilian sector and
25 try to segregate the actual Active Duty positions

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1 to those that are actually doing mission-critical
2 activities, that when you think about the
3 military -- I mean, the military, while we talk
4 about the health of the personnel itself, they
5 are here to accomplish a mission and,
6 increasingly, it's going to be more difficult to
7 accomplish the mission by just focusing on those
8 Active Duty personnel because a lot of the
9 components of accomplishing your mission are
10 being done by persons that are not actually
11 Active Duty. And so to what degree do we have to
12 factor in trying to approach those same types of
13 metrics for those personnel that are actually
14 playing relatively critical roles in terms of
15 accomplishing mission that aren't Active Duty
16 personnel. Otherwise, we're sort of missing the
17 big picture.

18 COL. WOODWARD: I think that's an
19 excellent point.

20 DR. MALMUD: Malmud. I think you've
21 done an extraordinary job of describing the two
22 elements, and there is a measure which can be
23 used to bring them together, and the measure is
24 cost. Cost is something that everyone
25 understands. It's applicable to mission because

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1 mission can be defined by cost per personnel and
2 the cost of an interruption in the mission. And
3 we have found in the private sector that it's a
4 very effective means of tracking what we do.

5 At our institution, we have taken on a
6 fully capitated Medicaid population for which we
7 were at full risk. So every dollar spent was our
8 own money. And we found that 3 percent of our
9 patient population is consuming well over 75
10 percent of our dollars. Within that 3 percent
11 population was a large cadre of children with
12 asthma being in the inner city. We actually
13 hired nurses who made regular rounds on these
14 homes, whether the child was ill or not, to teach
15 the parent how to care for the child
16 prophylactically and reduce the acute care
17 hospitalizations. It was very effective because
18 we could demonstrate an immediate saving in a
19 young population as opposed to, for example,
20 smoking cessation in which the savings would be
21 many years delayed, although we worked on that as
22 well.

23 So, I believe that there is a connect
24 between the two, and you've touched on it without
25 mentioning the word, but the word is "money".

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1 And that is a very effective means of tracking
2 and tying together these two disparate elements
3 which you have clearly demonstrated are not
4 disparate, they are connected. The measure is
5 dollars.

6 DOD understands dollars. We
7 understand dollars in the civilian population,
8 and it's a very good way of measuring the
9 effectiveness of interventions.

10 We found that we had a noncompliant
11 maternal population, unwilling to come early in
12 the pregnancy. Yet, when offered financial
13 rewards within the law -- for example, car safety
14 seats for infants and children provided for free
15 to the population who would seek early maternal
16 care; free vitamins; certain number of free
17 diapers -- one would assume that a parent would
18 wish this for his or her child and, yet, though
19 they wished it, they still needed incentives, and
20 incentives were very effective in reducing low
21 birth weight infants, which are a direct result
22 of poor prenatal care, as you pointed out once
23 again.

24 So there are measures, and I think the
25 measure that ties them together, though we don't

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1 like to use the word, is money, and the money is
2 measurable. It's something that all of us
3 understand, as taxpayers, as DOD, as parents, as
4 individuals. Each stakeholder must see some
5 reward that he or she understands, not the
6 theoretical reward of a young person trying to
7 understand what the outcome of his or her
8 behavior will be 50 years ago, but some immediate
9 reward for that kind of behavior, and it is cost-
10 effective. It does reduce the overall cost, even
11 though it's an out-of-pocket expense at the
12 moment. Your description is splendid.

13 COL. WOODWARD: Thank you. Just one
14 quick comment on that is that I would just throw
15 one caveat in there about the money. Using money
16 as a "currency" for measuring health in the
17 military is that our budgeting system -- you
18 know, we're allocated money from Congress. In
19 our process, it's not quite as easy to attribute
20 money to some of the processes in the Military
21 Health System. We've been trying to do it for
22 years, and it's a very tricky business, but maybe
23 worthwhile to continue to pursue.

24 DR. MALMUD: If I may, you're
25 absolutely correct. We had the same problem

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1 because it's a Medicaid system and there are
2 federal guidelines for how the system will work.

3 So in our case we got private donor to
4 underwrite the expense of the additional services
5 provided to reduce the morbidity and mortality in
6 this Medicaid population. So the private grant
7 augmented the Medicaid services. None of the
8 Medicaid services themselves, the physician
9 services, was paid for by the private grant, they
10 were all paid for by Medicaid. And, in fact, the
11 Medicaid expenses might have appeared to increase
12 in some areas, but they decreased more profoundly
13 in others, and the private grant simply paid for
14 access and for incentives. It did not pay for
15 anything which was prohibited by government.
16 Same problem.

17 COL. WOODWARD: Thank you.

18 DR. OSTROFF: Dr. Herbold and then
19 Margot Krauss.

20 DR. HERBOLD: John Herbold, Texas.

21 DR. OSTROFF: Welcome, John.

22 DR. HERBOLD: My questions/comments
23 are more mundane. I'd like to congratulate you,
24 Kelly, this is a great approach. My concern
25 regards methodology. Many times these success or

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1 failure are determined by a series of cross-
2 sectional prevalence surveys of a unit of
3 analysis that's at the group level. So at the
4 Wing or the Squadron or at the MTF, or whatever.

5 And I think it's important that if you
6 want to have this be a value to the individual
7 and truly measure whether you've changed behavior
8 and/or health outcomes is that it needs to be
9 longitudinal in some manner, and the unit of
10 analysis needs to be at the individual level, and
11 then you could aggregate that up. But, you know,
12 a number of folks in squadrons/wings -- people
13 come and go -- and a lot of assumptions made for
14 national studies assume that county populations
15 or state populations stay constant, or there
16 might be some adjustments for that. But in the
17 military setting, I really think that the
18 methodology of analysis and to attribute success
19 or failure needs to be seriously looked at. You
20 cannot just do a series or cross-sectional
21 prevalence studies and -- if I were the Wing
22 Commander, I would not be happy with that, if I
23 understood anything about statistics. Thank you.

24 COL. WOODWARD: I think you're
25 absolutely correct, and I just want to say real

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1 quick that the Air Force -- we've had some
2 adventures into that very issue, to the point
3 where we -- we have a very integrated health
4 system, so we can keep track of individuals
5 wherever they are in the world, and we are
6 getting better and better at it all the time. So
7 we are able to actually attribute things all the
8 way to the individual probably better than a lot
9 of other health systems anywhere. But in the Air
10 Force, we have tried to build a few measures
11 around population health, around clinical
12 preventive services in particular, stratified all
13 the way down to the individual level. And when
14 that individual moves, Kelly Woodward moves from
15 Scott Air Force Base to Brooks Air Force Base, my
16 health -- my denominator just moves to a
17 different unit, but all my health data is still
18 attributed to me, and that new unit has now got
19 me in their denominator and they are now tracking
20 me for action, and it's scalable all the way up
21 to the enterprise view. And so we have had some
22 successes, and you're right, the methods are
23 extremely important. I guess I don't know that
24 we ought to aspire to have all of our measures
25 initially be all the way down to the individual

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1 level because that might be too hard right away,
2 but we ought to build toward that model.

3 COL. KRAUSS: Before I was at Walter
4 Reed, I used to be at Fort Lewis, Washington. I
5 ran the Preventive Medicine Residency out there,
6 worked in the Preventive Medicine Service. And,
7 certainly, the Army is set up very differently
8 the Air Force in how we operate, so I'll give you
9 my Army experience. I don't know about the Air
10 Force.

11 But at that time, we had a health risk
12 appraisal which really was a local public health
13 program where we would get the risk factors very
14 much like what the Air Force is talking about,
15 and it was really run from the community health
16 nurse standpoint as a health education tool to
17 let people know what their risk factors were, how
18 they could do something about it, but it was also
19 a commander's program. So as we went out and did
20 a unit, then we'd go back to the commander and
21 say "You have 46 percent of your soldiers are
22 smoking, 4 percent give a history of trying to
23 commit suicide in the past". All the risk
24 factors basically were just outlined. Then the
25 commander had the ability to say, "Well, we

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1 really need" -- whatever -- "smoking cessation,
2 we need mental health", and we'd bring together
3 all those different elements to the unit to help
4 those individual soldiers. I think it was a very
5 effective program, and that's really the way --
6 it was a public health model to try to improve
7 the health of the population.

8 Now that I'm at Walter Reed, I
9 actually can look back at some of that historical
10 data and actually do longitudinal analysis.
11 Unfortunately, the HRA program disappeared
12 somewhere along the line. I don't know all the
13 details about that.

14 And then in concert for the clinical
15 portion, what we did was targeted studies because
16 we certainly don't have the resources out there,
17 at least in the Army, to do everything all the
18 time. And so we would take the major public
19 health problems -- certainly, STDs are always a
20 major health problem -- and then we'd put
21 together a program to address those problems. So
22 at the time that I took over the STD Clinic -- we
23 had a centralized STD Clinic, which is also
24 unusual in the military -- we had over 60 GCs a
25 month. By the time we put together our entire

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1 program, we were averaging 2 GCs a month. So
2 this was a major effort, and I think that success
3 has held on. But we would go down each one of
4 the Preventive Medicine criteria and do an
5 analysis, say what we need to do to attack that
6 problem, and then years later we'd go back and
7 relook at it. But it would be very hard for most
8 Preventive Medicine physicians in the Army at
9 least, at a small post with a small staff, to
10 track all these things all the time. So, I just
11 put that out as an alternative method.

12 DR. OSTROFF: Thank you. Grace.

13 DR. LEMASTERS: In a study I did once
14 of trying to change behaviors in carpenters, we
15 worked on journeymen and found that that was very
16 unsuccessful, but the apprentices we were able
17 to, when they first went into carpentry, really
18 change ergonomically how they were doing things.

19 So, I was just thinking about front-
20 loading your efforts and with recruits looking at
21 smoking patterns and even doing breath samples on
22 recruits for cotarnine or alcohol or drugs or so
23 forth, and really getting some objective measures
24 perhaps incentivizing them for not smoking,
25 whether it's different insurance or better

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1 insurance or money or times off, and for those
2 that would be willing to stop smoking, nicotine
3 patches -- you know, the recruits want in, and
4 they are going to do what they can do to
5 hopefully get in and stay in.

6 So, I was just thinking, rather than
7 trying to change behavior, how to prevent it at
8 the outset. So I don't know if you've tried that
9 focus, but that's one I did, and also looking at
10 objective breath measures. As Col. Gibson and
11 others have done in a study, as you know, looking
12 at field exposure, breath samples are easy to get
13 and very exacting.

14 And the other thing I was wondering
15 about combining two programs like alcohol use and
16 injury reduction, almost like a 2-for-1. If you
17 focused on alcohol use, like we saw at Kirkland
18 Air Force Base, they have a great injury program
19 or surveillance program, and tied it in with
20 accidents that were occurring in car and alcohol
21 use, so 2-for-1 on that one, maybe.

22 COL. WOODWARD: That sounds fabulous.
23 Just one comment on smoking in young recruits.
24 You've hit on an issue that we're very sensitive
25 to in the Air Force. We have seen smoking in the

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1 19- to 25-year-old age group in the nation has
2 actually increased for the first time in a long
3 time, and that's very troubling, and we're seeing
4 that in the military as well. So we're looking
5 at interventions for people who first come in the
6 military, to prevent them from initiating smoking
7 preferably, and then smoking cessation as a fall-
8 back position.

9 DR. OSTROFF: Let's take one or two
10 more -- well, we have three comments over here,
11 and then we'll have to move on to our next
12 presentation. Dr. Cline.

13 DR. CLINE: Barney Cline. Apropos to
14 Dr. Malmud's comment, here we are near Hartford,
15 Connecticut, which I think of as the heart of the
16 insurance industry in this country, and I just
17 wonder how much -- it seems to me that no one
18 knows more about risk factors and relating that
19 to outcomes than the insurance industry, both
20 life insurance and health care. To what degree
21 are we taking advantage of that experience, that
22 knowledge, that body of information?

23 COL. WOODWARD: Well, sir, I guess --
24 to me, it seems that many of the risk factors
25 that we're concerned about have been well

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1 established in close association with the
2 outcomes of concern -- you know, smoking and lung
3 cancer, overweight and obesity, and a whole host
4 of problems, cholesterol and heart disease -- I
5 guess I feel like we're on pretty solid ground to
6 target those risk factors.

7 DR. CLINE: Well, dollars drive the
8 industry. And coming back to what Dr. Malmud
9 said, it seems to me just intuitively because
10 this is not my area of expertise, that there's
11 knowledge and experience there that we have not
12 fully captured.

13 COL. WOODWARD: Thank you.

14 DR. OSTROFF: Mark.

15 DR. ZAMORSKI: I think there are many
16 really fundamental sort of tensions or issues
17 that will have to be resolved in order to address
18 the questions before the Board. One is the sort
19 of uneasiness between our expectation that our
20 members will be honest with us about their health
21 so that we can have good data and so we can
22 provide appropriate care, with the sanctions that
23 we bring to their honesty when we limit their
24 career options and such. And as we want better
25 data and more honesty and better access, we're

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1 going to have to try to find some way to resolve
2 that, or at least decide that this is the right
3 balance. And I'm not sure if there's a
4 structured way of doing that.

5 The other is some tension between an
6 individual's expectations of privacy about their
7 health data and the military's need in order to
8 have complete data in order to make good
9 decisions, and the trend in society, of course,
10 is to better protections for individuals about
11 sharing their data, and I think in time that will
12 filter through to the military.

13 And then, lastly, and I think perhaps
14 most importantly, is the right balance between
15 individual freedoms and community constraint when
16 it comes to health promotion activities. And
17 one, of course, advantage that the military has
18 is our ability to control many of the
19 circumstances of our members' lives in a way that
20 both facilitate good behaviors and eliminate bad
21 ones, but the issue about smoking in submarines
22 just really, of course, floored me because I just
23 -- I was totally shocked to hear that, and it
24 would be a good example of one way to restrike
25 that balance.

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1 DR. BROWN: I couldn't believe they
2 would let submariners have matches, much less
3 cigarettes.

4 (Laughter.)

5 COL. HOFFMAN: Ken Hoffman, TMA
6 Population Health. We're talking about health,
7 and one of the things that's kind of been
8 striking, I guess, as I've been looking at this,
9 is that we really don't seem to have much of a
10 health vocabulary in terms of what we're trying
11 to create over the long-term, as opposed to
12 problems that we're willing to acutely treat in
13 the short-time. How do we develop a healthy
14 population without being able to even have the
15 words describe what we're trying to do?

16 And there may be kind of a doorway at
17 this point. I think there's a high interest in
18 obesity, and this has become, I think, from the
19 PHS side of it, and I think DOD also, has a
20 strong level of interest to look at what it might
21 do to kind of create a less overweight
22 population. But as I look at that, the other
23 thing that we've been tremendously successful in
24 some of our behavioral change programs of the
25 past, to the point that as I look at -- talking

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1 about smoking cessation -- addiction is, I think,
2 a disease in every sense of the word, and the
3 success rates we're willing to tolerate really
4 becomes a system's issue. We seem to be happy
5 with 5 percent if it's tobacco. I think diabetes
6 we wouldn't be too happy with 5 percent, but we
7 might strive for something higher. In fact,
8 we've had that capability with alcohol, being
9 able to reach about 5 percent success.

10 So, I think there's things we might
11 learn from what we've been able to do
12 effectively, which is also being able to follow
13 those populations that we could maybe use as a
14 model for the activities that need to be in
15 place.

16 One of the things I also get concerned
17 with when we talk about metrics is that we have a
18 tendency to put metrics out without necessarily
19 attaching it to a business process work that
20 needs to be done, and it might be good, whatever
21 we define as a metric, to have it linked up to
22 specific activities, and then from there to
23 follow the individuals, which is the other -- in
24 terms of the metrics of what defines our health
25 status, both problems and strengths, and then

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1 following that over time.

2 I guess it's more of a commentary, but
3 we have so many scattered systems it's almost
4 like we're in a data smog right now, and we don't
5 know quite where to pull things together, what's
6 reliable -- in fact, a lot of the data may be
7 unreliable -- and try to pull it into a coherent
8 health system that's actually improving the
9 health of the command. And in the process of
10 doing that, we're setting maybe national
11 standards in terms of what improved population
12 health would be.

13 COL. WOODWARD: Thank you.

14 DR. OSTROFF: One last comment.

15 DR. LAUDER: Perhaps I'm not
16 understanding this clearly, but it still seems to
17 me like we're talking about -- we have a question
18 of outcome measures where we still don't have a
19 standardized database. Are we going to have to
20 come up with different plans for the different
21 services, and different populations with
22 different risk factors? Seems like we're a step
23 ahead before we've established what our database
24 even is. And maybe I'm just not understanding it
25 clearly, but I think one of the things -- and you

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1 brought up the Army may have a hard time getting
2 all that information all the time. Well, we have
3 to assure that if we're going to have outcome
4 measures that are going to be useful across-the-
5 board, we still have to have the same data for
6 everybody.

7 COL. RIDDLE: That's ultimately
8 important, and the whole session this afternoon
9 is going to be focused on DOD datasets. Mike
10 will give us a good overview of what's available
11 that overcomes any service specificity. That's
12 the difficulty of this whole thing, it's one
13 thing to say what's desirable to measure, and
14 then the other is what's feasible to measure
15 given our complex system that has four services -
16 - five, depending on how you count -- plus the
17 DOD, plus even cross-walking behavioral issues
18 into the line side of the services -- at least
19 I'm saying the Air Force, you find yourself in
20 rice bowls are different than what we're used to
21 dealing with, and it gets very tricky.

22 DR. OSTROFF: Well, we have some
23 wiggle room in the schedule for discussion, which
24 is why I let the questions and answers go on.
25 Before we move on to the next presentation, we do

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1 have two Board members that have arrived since we
2 went around the room and did introductions. So
3 if Dr. Blazer and Dr. Herbold wouldn't mind
4 introducing themselves.

5 DR. BLAZER: I'm Dan Blazer. I
6 apologize for being late. I had a meeting last
7 night. I'm a professor of psychiatry in
8 community and family medicine at Duke University
9 Medical Center. I'm a psychiatrist and an
10 epidemiologist.

11 DR. OSTROFF: John.

12 DR. HERBOLD: My name is John Herbold,
13 University of Texas School of Public Health. I'm
14 going to brag a little bit. We just received our
15 funding for our Academic Center for Public Health
16 Preparedness, and we also just got notified this
17 week that we got a HRSA grant for continuing
18 education for bioterrorism awareness for health
19 professionals. That's my political plug for the
20 day.

21 DR. OSTROFF: Congratulations. Our
22 next presentation is by Dr. Bob Opsut, from
23 Health Affairs, and he's going to talk to us
24 about DOD-wide metrics efforts. I must confess,
25 in listening to some of the discussion, that when

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1 we think about what works and what doesn't work,
2 there's always the carrot-and-the-stick approach,
3 and many of the comments about trying to
4 incentivize positive behaviors, I think, is very
5 interesting because I think far too often we try
6 to take the stick approach rather than the carrot
7 approach.

8 DR. OPSUT: Good morning. Good segue
9 on consolidating metric efforts because in fact a
10 couple of years ago we looked out and we did in
11 fact see multiple efforts going on, and we said
12 we need to start putting some structure on this.

13 (Slide)

14 But, first, why do we even ask this
15 question? Well, there's really two reasons. One
16 is, actually the government requires us to. The
17 government Performance and Results Act of 1993
18 requires all government agencies to develop
19 performance measures, and I'm not just talking
20 population health here, I'm talking in general
21 how are the agencies doing in terms of
22 performance. But, more importantly, and what
23 we're getting here is, we want to. We want to
24 see how well we are doing, and we want to measure
25 that compliance with policies and the strategic

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1 direction.

2 (Slide)

3 And it's got to start from the top.
4 You have to start with what is the strategic
5 vision? What is the mission? How will it be
6 accomplished? What is the strategy? What are
7 the markers for that accomplishment? And how do
8 we measure those markers?

9 (Slide)

10 But here's what really happens to
11 us. Again, in my job, I'm Director of Program
12 Review and Evaluation, and I sort of head up the
13 metrics programs for the Military Health System,
14 and we've got many, many bosses. And so Congress
15 asks, "How are you doing?" And OMG asks, "How
16 are you performing?" The Secretary of Defense
17 says, "What are you doing?" And the Under
18 Secretary of Defense for Personnel and Readiness
19 that we work for looks across his span of control
20 and says, "What's going on in Health Affairs?"
21 And the Assistant Secretary, the Tricare
22 Management Agency, the three services all have
23 questions that are asking how are we doing in
24 terms of performance. And then, finally, our
25 regional lead agents are asking that.

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1 And if we looked at this three or four
2 years ago, we would have seen each one of these
3 coming up with a different set of metrics. In a
4 sense, we're asking the same questions, but still
5 coming up with a whole host of "Well, we're going
6 to measure this, and here's how we're going to
7 measure it, and give us this data. And, Mr. MTF
8 Manager, we need to measure this, so give us this
9 data", and so on and so forth. And we found out
10 that there were just a whole host of different
11 information requirements that were asking similar
12 questions, but asking it in slightly different
13 ways. So we came up with a Consolidation Board
14 that was trying to do that.

15 (Slide)

16 Again, some of the different metrics
17 programs that are out there, and everybody wants
18 their own measurement of performance, GPRA
19 requires it. OMB is asking us to actually have
20 common measures with the Veterans Administration,
21 with HHS. The SECDEF, we do an annual
22 performance contract with him that says how we're
23 doing. The Department of Defense has a balanced
24 scorecard. There's a program called Monitoring
25 the Status of the Force. We do a quarterly

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1 review of the MHS and, again, all these specific
2 programs. And each of these programs have a
3 different flavor to them, but they are all asking
4 the same questions.

5 (Slide)

6 Most recently, the SECDEF required a
7 Balanced Scorecard. Personnel and Readiness had
8 10 to 12, and we got essentially 3, some dealing
9 with satisfaction, some dealing with
10 productivity, and some dealing with how much we
11 spend on the outside, a cost measure.

12 (Slide)

13 We have, in fact, come with an MHS
14 Strategic Plan. We used Harvard's Balanced
15 Scorecard approach. We basically looked at
16 external customers, financial -- we have five
17 different perspectives, some dealing with
18 financial, some readiness, some quality, cost --
19 I'm sorry, six perspectives -- and internal
20 customer.

21 What we're trying to do is, again,
22 whenever a request comes up, we're trying to
23 develop a Standard Metric Set, and what we're
24 asking for from you is input for that standard
25 Metric Set, that says, "You want this. Here is

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1 what we're measuring and here's how we measure
2 it". But the fact is that as we went through the
3 strategic plan, there were a bunch of holes in
4 it. By using the Balanced Scorecard approach,
5 we're able to say, "Well, there's this section
6 that we don't have a measure for, but we know
7 it's an important concept". And by doing that,
8 we decide that there are, in fact, many things
9 that need to be developed and, in fact, the
10 population health is one where we have some
11 rudimentary stuff, but we really need some help
12 in deciding what are those larger key measures.

13 (Slide)

14 This is in your sheet. I know it's
15 hard to read, but these are, in fact, the list of
16 metrics off the Balanced Scorecard, and you'll
17 notice that some are in red, some are in yellow,
18 and some are in green. The green are the ones
19 that we can do fairly well right now in terms of
20 measuring. The red ones are the ones that we
21 need a lot of work on and that are basically
22 conceptual, and the yellow ones are the ones that
23 we have some idea as to what we are doing, but we
24 still need that.

25 The two -- and I apologize for the

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1 small print -- but the two that are most
2 appropriate here is one that says "Quality
3 Outcome Measures", and that essentially, as Kelly
4 talked about, is sort of the HEDIS like measures,
5 how are we doing on the quality indicators. And
6 the other one is how the communities -- and we're
7 looking at the Healthy People 2010 measures --
8 and, again, we've got some rudimentary concepts
9 as to what goes in there, but we really need to
10 know are they the right things that we should be
11 measuring, and how should we measure those.

12 (Slide)

13 When you come up with your
14 recommendations, one of the places that it will
15 have to come through is what we call the Metrics
16 Standardization Board. Because we have so many
17 large efforts in terms of this, we decided to
18 have a board composed of the three services and
19 Health Affairs and TMA, to standardize the
20 measures to say, "When we talk about satisfaction
21 with health plan, here's how we're going to
22 measure, here's what the database is going to be,
23 here's what the methodology is going to be, and
24 here's how it will be displayed.

25 We started with things we already had

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1 in the Performance Contract and the MHSER, much
2 of what you saw on the last page, but we're
3 trying to integrate with multiple communities and
4 multiple interests. When these things come up,
5 you've got the Army doing one thing, the Air
6 Force doing another, the Navy doing a third
7 thing, and what we're trying to do in this
8 program is say "Where are those commonalities,
9 which ones are the best to breed, which ones do
10 we think make the most sense and that drive the
11 right behavior from a strategic view". And,
12 again, we have to decide on what the definition
13 is, what the data source is, what the methodology
14 is.

15 Once we do all that, we go back and
16 reengineer the old programs. So we'll go to
17 Kelly or to the Air Force and say, "Okay, this is
18 how you were measuring it, but we need you to
19 change in this direction in order that we have
20 this consistent measure from the top to the
21 bottom". It also becomes the source, this
22 Metrics Standardization Board, for those new
23 measures. So when your recommendations come up,
24 in order to have it implemented systemwide, this
25 is the Board that will look at the methodologies,

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1 look at the data sources and say, "This is what
2 we want, how we're going to measure those
3 things".

4 (Slide)

5 We've got basically, again, three
6 services represented, but we also have a
7 Triservice Metrics Working Group that essentially
8 gets down into the weeds and looks at the
9 individual data elements, looks at the
10 methodology. Those are the technical experts.

11 (Slide)

12 But what we really need to start with
13 is what is the senior leadership vision, that
14 really is what should drive the mission and form
15 the basis for the metrics. But we need to use
16 the same data so that when the Army reports a
17 mammography rate, the Air Force reports a
18 mammography rate, the Navy reports a mammography
19 rate, it's using the same methodology because,
20 otherwise, we get very mixed messages. And,
21 again, we need that for both our internal
22 customers so that we're driving the right
23 behavior down the deck plate, and for our
24 external customers so that aren't hearing things.
25 Is the smoking rate going up, is the smoking

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1 rate going down, is the mammography rate going
2 up, is the mammography rate going down, and so
3 on.

4 So, as your recommendations come
5 forward, this is the place where it will be
6 vetted, where it will be looked at to make sure
7 that it's consistent across all three services.
8 And with that, I'll take questions.

9 DR. OSTROFF: Thanks. Let's open it
10 up to some comments and questions.

11 COL. HOFFMAN: Ken Hoffman. I'm not
12 sure if it's easy to understand how the different
13 methodologies could come into play -- you know,
14 take that mammogram rate and how different
15 methodologies had been used to calculate what,
16 from a process standpoint, would be a very simple
17 thing.

18 DR. OPSUT: Okay, let's give an
19 example. Let's use the mammography rate. At the
20 current time, we use a survey methodology that
21 essentially asks women when was the last time you
22 had a mammography, and it's across all of DOD
23 that we can do that. Now, that's fine from a
24 Healthy People 2010 perspective in terms of what
25 is the mammography rate, but because it's a

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1 survey you can't drive it down to individual
2 providers.

3 So we're trying to get methodologies
4 that look at, in fact, our clinical data that
5 can, in fact, get down to the provider level, but
6 now you've got to come up with the methodology
7 that says looking at the clinical data, looking
8 at our automated data, what's the population of
9 interest, what's the indicator that a mammography
10 was done, how do you go across both our direct
11 care system which is in our MTFs, Military
12 Treatment Facility, and how do you cross-walk
13 that with the purchased care data, which is
14 essentially claims data.

15 Population of interest, something as
16 simple as who's enrolled and who's not enrolled.

17 The HEDIS definition says you're enrolled for
18 two years continuously, so you've got to talk
19 about what does that mean in the Military Health
20 System to be enrolled for two years continuously.

21 If somebody moves from Base X to Base Y, are
22 they still considered enrolled, and do you assign
23 it to Base X where they began with, or do you
24 decide to assign it to Y where they're at? If some-

25 support contractor to being enrolled in an MTF,

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1 is that still continuous enrollment, or not? And
2 dealing with those types of issues on what's the
3 methodology that when you say what's the
4 mammography rate, it's a fairly simple question.

5 Getting down to how do you apply it to the
6 specifics of the DOD databases becomes much more
7 difficult.

8 But even the larger strategic question
9 of what are the right outcomes that we should be
10 looking at is -- is mammography rate the right
11 issue that we should be looking at? How does
12 that affect readiness?

13 Clearly a third of our admissions are
14 related to births because for the most part we
15 have Active Duty family members who are married
16 and female. So a lot of our measures at the
17 moment are related to low birth weights and
18 prenatal care and so on. But, again, a
19 perspective of what are the important
20 determinants of health and what are the processes
21 that we ought to be measuring in order to do that
22 is part of your task.

23 DR. OSTROFF: Before I take the next
24 question, could I ask you -- I'm looking the
25 Standard Metric Set that you presented, and some

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1 of it is not decipherable to me, maybe because I
2 just don't understand all of the different terms
3 that are on here like "instrument panel", and,
4 plus, it's a very different set of metrics than I
5 was anticipating seeing, that it seems to be
6 metrics of the level of performance of the health
7 care system rather than levels of health per se.

8 So, I'm wondering if you could comment on those
9 two issues? I mean, it looks like how many
10 people like their health care encounter, and
11 things of that nature -- how often the telephone
12 is answered.

13 DR. OPSUT: Again, the population
14 health is part of a larger set of performance
15 measures that include cost and satisfaction and
16 so on.

17 (Slide)

18 The instrument panel -- the Balanced
19 Scorecard is, again, linked to our strategic
20 plan. Here are the things that we do, and you'll
21 see the different perspectives on the right. In
22 addition to that, there's an instrument panel
23 that tries to measure at least the ones that are
24 quarterly or monthly in nature, but then there
25 are some other things that aren't on the balanced

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1 scorecard that we also measure, they are more
2 just items of interest, so to speak -- things
3 like how many enrollees do we have, things like
4 telephone inquiries, things like how many RVUs,
5 how many outpatient workload did we do, how much
6 RWPs, adjusted admissions, did we do in the
7 system. But, again, this is the whole set of
8 standard metrics that include population health
9 in just two of them, maybe three. There's one
10 that's preventable admissions, but putting this
11 in the context of this larger standard metric
12 set.

13 COL. KRAUSS: Margot Krauss again. I
14 think this presentation is critical because how
15 you measure things makes all the difference in
16 the world. And again I'll go back to my Fort
17 Lewis experience. We were interested to make
18 sure that Active Duty women got their pap smears,
19 so we did a survey and only like 70 percent were
20 reporting getting their pap smears.

21 So we did a different type of study
22 and looked at those women who had been actually
23 at Fort Lewis for a year, and using the pathology
24 records we documented over 90 percent had gotten
25 their pap smear. So, which number are you going

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1 to use?

2 Likewise, with the community prenatal
3 care, it actually hit the newspapers that only 70
4 percent of our women were getting prenatal care
5 in the first trimester, which we were not very
6 happy about. An investigation into that looked
7 at our definition of what is prenatal care. The
8 lady who was coding it on the birth certificates
9 decided that what we do in the military, which is
10 en masse prenatal care, was not prenatal care, so
11 she didn't count the first visit.

12 So that type of thing is not an easy
13 answer, and I dare say installation-to-
14 installation is going to be very different. Who
15 that person is who is coding this information is
16 going to be, again, very different. Thank you.

17 DR. OPSUT: And, again, whatever we
18 get into this, this is one of the problems trying
19 to consolidate the three or four services that we
20 talk about because, in fact, they have at least
21 different reliability of data systems. Some of
22 them have different data systems. And what we're
23 trying to do in this process is saying we've got
24 to get a way so that they all talk to each other.

25 DR. OSTROFF: Other comments? Roger?

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1 LtCOL. GIBSON: Roger Gibson. I would
2 just try to tie together what Dr. Herbold said
3 and what Margot said here, cross-sectional
4 studies, particularly cross-sectional studies
5 using survey instruments that have questionable
6 validities both internal and external, really do
7 create problems when we try to measure --
8 standardize measures across populations. It's a
9 critical point.

10 The analogy that you used of measuring
11 prenatal care is a perfect example of that. A
12 survey that -- do we remember that, do we
13 remember when we had our last cholesterol? We
14 ran into that with it here in Region 6 time and
15 time again.

16 DR. OPSUT: So we've been attempting
17 through this process to drive it from using
18 surveys, although, clearly, for some measures,
19 surveys is the most appropriate when we're
20 talking about satisfaction with health care. I
21 don't know of any other way of doing that. But
22 for things that we can, in fact, get clinical
23 records or at least claims data, we're trying to
24 drive that down to that level.

25 DR. OSTROFF: Dr. Brown.

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1 DR. BROWN: Thanks. I don't know -- I
2 got in late last night, and I'm really lacking a
3 little bit of sleep, but I'm having a little bit
4 of trouble understanding exactly what you're
5 trying to do here because I've heard it stated in
6 slightly different ways.

7 As I understand what you're trying to
8 do here, you're interested in figuring out ways
9 to measure health outcomes that affect readiness,
10 so that you can then prioritize your preventive -
11 - the resources that you have for prevention, you
12 can prioritize them and put them where they'll do
13 the most good, I think is what you're trying to
14 do.

15 And it strikes me that maybe a
16 suggestion would be that the way you could decide
17 what to focus on would be just cost, just the
18 cost figures, that would be a good analogy in a
19 civilian counterpart, a civilian medical system -
20 - you know, what outcomes are costing you the
21 most money, you could measure that.

22 And then I'm not sure that would work
23 in your case, for Department of Defense, but
24 maybe readiness measurements would be a good
25 metric. And I'm wondering, is there any data, is

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1 there any information -- somebody must have just
2 summarized the various types of disease, various
3 health problems and how they affect readiness. I
4 mean, somebody mentioned earlier that smoking had
5 a profound effect on readiness of certain Air
6 Force components, I forget what it was. But is
7 there a measurement? Is there some sort of a
8 list of what are the things that create the most
9 down time? What are the diseases and illnesses
10 that cause the most down time, that have the
11 largest impact on military readiness at anytime?

12 DR. OPSUT: One of these is actually
13 headed Individual Medical Readiness. What is the
14 process of actually trying to get to what's the
15 percentage of the military population actually is
16 ready at any given time to deploy, and the
17 reasons why not. Did they have their
18 immunizations? Did they have their shots? Do
19 they have their dental, and so on? We don't have
20 that information very readily --

21 DR. BROWN: But is that the major
22 focus, the primary focus of what you're
23 interested in?

24 DR. OPSUT: I think it's a little bit
25 broader than that, it's population health in

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1 general, realizing that for a significant
2 population it will impact readiness. But I don't
3 think it's just limited to the Active Duty
4 population. Correct me if I'm wrong, Rick.

5 COL. RIDDLE: No, no. The question,
6 the broad question, is you may be able to pilot a
7 particular measure of a particular measure on the
8 Active Duty side to see if the system supported,
9 and then you're able to then take that to the
10 beneficiary side, or it may be a particular
11 measure that is applicable given the availability
12 of the data systems, both Active Duty and
13 beneficiary side.

14 I had a question for Dr. Atkins. The
15 last recommendation where we looked at the
16 clinical preventive services and the
17 recommendations of the USPS Task Force, literally
18 what they have done is they have looked at all
19 the available evidence, and based upon the best
20 medical evidence they have made recommendations
21 that if we do these things, that will result in a
22 lower morbidity among these individuals in the
23 population as a whole.

24 So these are the processes that will
25 improve population health, and that's a Clinical

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1 Preventive Services guidelines?

2 DR. ATKINS: Yes. So from the
3 clinical end in terms of specifics or one-on-one
4 preventive services, the Task Force
5 recommendations provide a basis for saying these
6 are clinical interventions you could implement
7 that would have effects on health outcomes.

8 The recommendations have to be
9 translated into metrics, HEDIS does that for
10 health plan data. And so there's a translation
11 process that's sort of figuring out, okay, how do
12 you turn that into a measure that you're going to
13 track, and the metric you might come up with
14 given military data might be slightly different
15 from HEDIS, depending on what data you have. And
16 HEDIS measures have generally followed Preventive
17 Services Task Force recommendations in terms of
18 their metrics on preventive care.

19 COL. RIDDLE: But the HEDIS metric is
20 more to compare health systems than really to
21 focus on implementation of the process for the
22 recommendation of the Task Force guideline.

23 DR. ATKINS: Right. I mean, HEDIS
24 measures cover -- it's a broad spectrum for
25 comparing health plan quality of care. Some of

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1 the measures are delivery of preventive care.
2 Some of the things you talked about in your
3 metrics, satisfaction with care, processes of
4 other system processes, and some are management
5 of acute illness, asthma care, and chronic
6 illness, diabetes management, things like that.
7 And so they have a number -- they are sort of
8 disproportionate for preventive care because they
9 are easy to measure on a broad population, but
10 it's still only a segment of the complete
11 recommendations for preventive care from the task
12 force.

13 DR. OSTROFF: Dana.

14 COL. BRADSHAW: Dana Bradshaw, from
15 Uniform Services. I just wanted to get back to
16 Mark's question, and it hasn't, I guess, been
17 brought up explicitly here, but I think the
18 background of this group, most people know about
19 the Prevention Safety and Health Promotion
20 Council, and there were costs really identified,
21 burden of illness identified, issues that the
22 Prevention Safety and Health Promotion Council
23 chose to work on. Those were tobacco, alcohol
24 and injury, and those were the three major things
25 in terms of cost and impact on the military that

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1 we felt that we had to work on, and there are
2 working groups assigned to each one of those
3 interventions that were cross-cutting because the
4 Prevention Safety and Health Promotion Council
5 included line-side folks so in terms of working
6 on tobacco cessation we could actually work with
7 the morale welfare folks, we could work with the
8 Exchange community to increase the price on
9 cigarettes, for instance. So it was crosscutting
10 and there were things identified that we felt
11 like were the major impacts on our communities.

12 DR. OSTROFF: Dana, was there any
13 equivalent for mental health?

14 COL. BRADSHAW: Suicide was one of the
15 issues that was working, and there were different
16 working groups underneath and suicide was one of
17 those in particular.

18 COL. HOFFMAN: Ken Hoffman again. I'm
19 just wondering what became of some -- I think CDC
20 several years back, maybe 10, 15 years ago, had a
21 nice bit of software, SAMMEC -- Smoking
22 Attributable to Morbidity/Mortality Economic Cost
23 -- and then there was a related one to alcohol,
24 alcohol-related disease impact, and it kind of
25 broke down populations, many of the risk factors,

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1 and then the cost both, I think, from a work side
2 and whatever. I'm wondering whether it's time
3 maybe to resurrect that type of approach, if it's
4 withered somewhere, but I think there are maybe
5 one or two papers that were published off of that
6 -- again, about 10, 15 years ago.

7 DR. OSTROFF: Jean.

8 DR. FORSTER: I don't know, I feel
9 like I'm somewhat simpleminded, but from what
10 Kelly is saying, it's exactly those kinds of
11 processes that you were talking about, that we're
12 talking about how to measure in terms of process.

13 I mean, it seems like we have the outcomes and
14 we know what the high cost risk factors are --
15 alcohol use, tobacco use, injuries. And so it
16 seems like that's what we need to be coming up
17 with measures for, process measures for --
18 alcohol-related interventions, tobacco-related
19 interventions, injury prevention interventions --
20 am I wrong about that -- rather than health
21 system kinds of measures. I don't quite get the
22 connect between health system measures and the
23 kinds of things that Kelly and Dana were talking
24 about.

25 COL. GARDNER: John Gardner, from

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1 Health Affairs. The Army has a program related
2 to that called the Risk Reduction Program, that
3 is run by the Alcohol and Drug Abuse Program, and
4 what they do is they go to their participating
5 bases and they collect the data on deaths,
6 accidents, injuries, STDs, drug positives,
7 arrests for various categories -- DUIs as well as
8 others, including child abuse, family violence.

9 The concept was that -- you know,
10 alcohol kind of pervades lots of different
11 outcomes -- and so they would track all of these
12 and collect the data from the Provost Marshall,
13 the health care system, the social services, and
14 so on, and then categorize it out by military
15 unit, and build a scorecard for each unit, and
16 then target those units. And these then are
17 reviewed quarterly by everyone from the base
18 commanders on down and with each commander. And
19 then they will then go and target their
20 intervention programs based on which units are
21 having which types of problems, and I think that
22 is a model for something similar to what you just
23 said, that I think it would be worth your
24 consideration in this review.

25 Secretary of Defense established the

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1 Defense Safety Oversight Council this summer, and
2 at the first meeting he got up and made the
3 statement that really sets the stage for why
4 we're addressing this. He said, "If you get the
5 metrics right and you get senior leadership
6 involved in tracking those metrics and asking why
7 they are not getting better, then you can
8 accomplish great change", and I think that's the
9 point here, is to help us get the metrics right
10 and help us figure out how to get senior
11 leadership involved so that we can try to
12 implement the change we're talking about.

13 DR. OSTROFF: I think he's right.

14 COL. RIDDLE: The one issue maybe on
15 that is, is it not too late by the time you're
16 measuring that? Similar to lung cancer in 40
17 years after an individual with a chronic history
18 of smoking, should you not be asking the
19 individual how many drinks they have per day or
20 per week, or have they had a binge drinking
21 episode, and you're really process measure is, at
22 that point in time, how many people are being
23 asked that question and what is being done to
24 follow up, as opposed to the end result, which is
25 the accident related to an alcohol abuse that an

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1 individual may have been an abuser for an
2 extended period of time and on an annual
3 intervention had never been asked that question,
4 similar to like the review with the Army. The
5 first time a soldier has a physical exam or kind
6 of a prevention-related encounter may be at that
7 30-year point because they don't have a process,
8 preventive health assessment, unless they have an
9 annual risk assessment or something else, if that
10 exists on a system basis. But, really, you need
11 to be bringing that individual every year and
12 looking for those leading indicators and
13 measuring the process of your intervention is
14 "Was Joe Snuffy asked on his annual encounter and
15 what was the follow-up subsequent to that", to
16 prevent the end outcome, which may be your
17 alcohol or your injury thing.

18 DR. OSTROFF: Kelly, Tamara and Dr.
19 Malmud.

20 COL. WOODWARD: I just want to address
21 that conflict that you're describing there. Part
22 of the point I was trying to make is that we do
23 have a health system -- Military Health System,
24 the DOD health system, for the most part is
25 mostly a clinical system, and there are lots of

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1 things we do have to measure in the performance
2 of that clinical system, and some of those, like
3 clinical preventive services, are probably
4 readily translatable into what impact health.

5 I think some of these other risk
6 factor things and what have you to measure --
7 quite honestly, if we want to measure the
8 processes that change those outcomes, those risk
9 factors, we might find ourselves getting into
10 things that are outside of what the health system
11 has been built to do, and I guess we have to ask
12 if we are advocating for health, my opinion is we
13 need to push that envelope as strongly as we can
14 and say "Here is the health problem. Here is
15 where the action needs to be taken" over to
16 whoever is supposed to take it if it is not the
17 health system, but the health system is -- 95
18 percent of our Military Health System is about
19 clinical care, and that may need to be fixed, but
20 that won't be fixed in the near-term. It will be
21 fixed by measuring and saying who is going to
22 address binge drinking, is it the medics or
23 somebody else? I don't know, sir, but we've got
24 to address it. That's my point.

25 DR. OSTROFF: Tamara?

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1 DR. LAUDER: I was just going to
2 actually comment on your presentation at the last
3 meeting where you brought up the Air Force system
4 of kind of following people more on paper or
5 sometimes in clinical, and that was brought up
6 with the question that was brought up last time,
7 too, and we talked about that in our
8 teleconference and how could that relate to what
9 Col. Gardner just brought up and bring the two
10 together -- you know, a tracking system -- and
11 use that information as an outcome measure.
12 Seems like there's already an example in the Air
13 Force and there's an example in the Army of a
14 couple systems that might be able to be brought
15 together.

16 DR. OSTROFF: Dr. Malmud.

17 DR. MALMUD: It seems to me that we're
18 trying to tackle too broad a problem, and in
19 tackling a very large problem there will be no
20 support. What's really needed is a focused
21 example, and we have to ask ourselves what is
22 that example. And the services do differ. There
23 are historic reasons for the differing
24 approaches, but there are practical reasons for
25 the differing approaches.

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1 When I was in the Air Force almost two
2 generations ago, we were told, as physicians,
3 that the goal of the Air Force was to keep planes
4 flying and the people who fly the planes are the
5 pilots and they are the most valuable commodity
6 in the Air Force and, therefore, that's our
7 mission, is to deal with pilot health and the
8 support services necessary to keep those planes
9 flying.

10 In the Army, there may be -- I can't
11 speak for the Army, and I can't speak for the Air
12 Force either, this is just what I was told, it
13 may not be true, and I can't speak for the Navy,
14 but the missions may have different foci and,
15 therefore, there may be different goals.

16 We agree, as physicians and as health
17 care providers, that we all want better health
18 care for every citizen in the United States,
19 whether he or she be active military, dependent,
20 or civilian, but we can't tackle that here in the
21 AFEB. And the question is what would lead to
22 success? What would lead to success is to have
23 an example that could be taken to the committee
24 chairs in Congress and demonstrated as something
25 that is practical, that could achieve results,

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1 and that could be bragged about during the next
2 reelection campaign by the committee chair. That
3 will bring home the money. That's the way our
4 government works.

5 Now, what is most important to us? We
6 should determine that first. Is it the expense?

7 We probably spend a lot more money on the health
8 care of dependents than we do of the active
9 military. Does anybody know what those figures
10 are, the percentage of dollars spent by DOD on
11 dependents versus active military?

12 DR. OPSUT: Yes, on a per capita basis
13 we spend a lot more on family members than we do
14 on active --

15 DR. MALMUD: How about a sum total?
16 Aren't there more dependents than there are
17 active?

18 DR. OPSUT: Yes.

19 DR. MALMUD: So, therefore, we now
20 know the greatest expense is going into
21 dependents. I'm not sure that that's the mission
22 of the military, but that's a reality. So it may
23 be that what we want is one program with regard
24 to Active Duty, one program with regard to
25 dependents, and show success, measurable success,

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1 using some of the metrics that you've discussed
2 and that you discussed, Kelly, earlier, and
3 present those, show improvement, declare success,
4 and let the committees of Congress fund the next
5 study. But this is such a broad issue, I can't
6 imagine that among the various committees of
7 Congress that fund these things -- because it's
8 not all coming from DOD -- dependents, once they
9 are out of the service, are in CHAMPUS, aren't
10 they, or other programs and they are funded by
11 other --

12 DR. OPSUT: If we can't care for them
13 in the military treatment facilities, then they
14 go to CHAMPUS.

15 DR. MALMUD: And that's a different
16 budget and that's a different committee.

17 DR. OPSUT: It's the same budget.

18 DR. MALMUD: Same budget? Same
19 committee?

20 DR. OPSUT: Yes.

21 DR. MALMUD: Perfect. That makes it
22 easier. That makes it easier. Then all you need
23 are really two projects -- one on active
24 military, one on dependents. The measures are
25 there. They are imperfect. Everything is

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1 imperfect. We spend 14 percent of our GNP on
2 health care. The Japanese spend 9 percent. If
3 you believe that, then you believe in Santa Claus
4 and the Tooth Fairy.

5 The truth is the Japanese have hidden
6 a lot of their expenses. When you want to go see
7 a doctor in Japan, you pack your lunch -- and
8 breakfast, too, perhaps -- and sit and waste a
9 day seeing a physician. Now, the quality of the
10 care may be equal to seeing a physician in the
11 United States, but it takes a whole day, and
12 mother knows that when she takes the child there
13 for that day. No one counts the day of lost
14 labor for the employee as a health care expense.

15
16 In the United States, managed care is
17 seen to be a solution. What kind of solution is
18 it where the patient now sees the orthopedist,
19 has to leave the orthopedist's office to get a
20 primary care to sign off on an x-ray permission
21 to have the x-ray done in an office separate from
22 the orthopedist's office because the orthopedist
23 is not a legitimate provider of x-ray services?
24 So someone is losing three days of work in the
25 process. So, in fact, managed care, which

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1 appears to be so efficient and cost-effective, is
2 not efficient and cost-effective if you count the
3 time lost from work, but we don't keep those
4 statistics, hence, they don't count.

5 So there is no perfect system. We
6 have to accept our own imperfections. But I
7 think that an example taking one of the issues
8 that you raised today and one that you raised
9 today, and deciding that's going to be a cross-
10 service example of where improvements can be made
11 -- and it may be in measuring those who fail
12 rather than those who succeed -- and taking the
13 patients who don't comply and seeing what can be
14 done to change their behavior, that may be the
15 project. It may be another project. But I would
16 suggest that that might achieve some success. If
17 we can present it to Congress as an example of a
18 study begun and completed -- the same way we
19 would present it to the NCI or the NIH -- where
20 the committees of Congress can take the credit
21 for it, I think we'll be successful in going on
22 to the next stage. Just trying to be practical.

23 DR. OSTROFF: Jackie, then John
24 Herbold.

25 DR. CATTANI: Jackie Cattani. I was

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1 actually thinking along those same lines. I
2 think when we faced the issue of effective
3 malaria control at the World Health Organization,
4 there are some politically complicated issues
5 about selecting one country or some
6 representative country, a small number, but to be
7 able to show that you could effectively control
8 malaria using a strategy of a multiple
9 intervention, but it never flew because of
10 political concerns and, well, if you pick one
11 country, et cetera, et cetera. But the
12 alternative to that is not controlling malaria at
13 all anywhere. And if you could show one or two
14 successes -- and I was thinking the same thing,
15 Leon -- that if you pick one or two priorities
16 and one or two of either Active Duty or
17 beneficiaries, that you could then sort of use
18 that to serve as the model.

19 The one thing I'd like to add to what
20 you said -- and I think it was only Grace that
21 mentioned it -- was the second point in your
22 presentation about how to engage individuals to
23 share responsibility for their health status. I
24 think that's as important as how you can make
25 people do what they do. It can be done through

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1 incentives, it can be done through penalties --
2 if they are in an accident, not wearing their
3 seatbelt, for example -- then that should carry
4 some kind of penalty, not just that it's going to
5 cost more because they weren't wearing their
6 seatbelt. So I would support that.

7 DR. OSTROFF: All I can say is that
8 based on recent experience, we're not going to
9 use compliance with malaria prophylaxis as one of
10 our metrics.

11 (Laughter.)

12 DR. HERBOLD: When these metrics are
13 collected, are they collected based on the
14 different patient population characteristics --
15 for example, dependents of Active Duty, Active
16 Duty, retirees?

17 DR. OPSUT: For the most part, we can
18 stratify almost all these metrics by those
19 categories, yes.

20 DR. HERBOLD: Because as Dr. Malmud
21 was talking, the loss of time in getting a clinic
22 appointment for an Active Duty person would have
23 a significant impact on mission performance. So,
24 if you get a quick turnaround when you go to see
25 the medic. For the dependent, although some

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1 might think otherwise, the accessibility to
2 military medical care and the turn around time
3 determines in many cases -- I know in my family's
4 case -- whether the dependents use the military
5 medical treatment facility. And if there's some
6 metric that says that that's more efficient and
7 less expensive than using CHAMPUS, well, then,
8 that is another metric. And then for the retiree
9 population, like many of us are, we are truly the
10 ghosts that are out there, and as long as the
11 university pays my health insurance, I'm going to
12 use multiple sources, so that's a -- the
13 Department of Defense doesn't know what it costs
14 for my medical care because it's being paid by a
15 different budget for the next seven years,
16 anyway.

17 So, are these things really
18 considered, or you're just saying they could be?

19 DR. OPSUT: No, no. We look at it by
20 those categories, for the most part, yes. And
21 one of the problems is -- you're right, for
22 Active Duty and Active Duty family members, we
23 can usually get a fairly complete set of data
24 because, in fact, most of them rely on us. For
25 the retirees and their family members, some of

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1 these data have to be reanalyzed because of the
2 problems with "ghosts", as you call them, of
3 people who don't use our health care system. So,
4 when we go to the clinical data systems, if I was
5 to do mammography rates for retirees, I may not
6 get the right number because I didn't see your
7 family's claim because it didn't even come to
8 CHAMPUS. So, no, we analyze usually by
9 beneficiary.

10 DR. OSTROFF: David.

11 DR. ATKINS: I've been trying to sort
12 of think about how to pull together the various
13 comments, since I'm assuming our subcommittee
14 might be tasked with figuring out what to do with
15 it.

16 DR. OSTROFF: Reasonable assumption.

17 (Laughter.)

18 DR. ATKINS: I was trying to figure
19 out how to make this an environmental health
20 problem, or an infectious disease problem, but it
21 seems to be a health promotion problem.

22 I guess what I heard from Kelly's
23 comments and Jean's comments, which I agree,
24 there's this issue of we're pretty good at
25 measuring health care and delivering health care

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1 and deciding what interventions we should push in
2 health care, and we're a generation behind in
3 figuring out how to measure health and figure out
4 what we ought to be pushing on to improve health,
5 and I agree with that. And I'm also hearing that
6 you're basically tasked with trying to come to
7 some consensus about what you're going to measure
8 with the idea that the measurement itself is
9 going to help drive the change. Even if we're not
10 exactly sure what we're going to change, we're
11 going to start by figuring out what we want to
12 measure and then figure out how we can move those
13 measures.

14 And so I think that -- and I also
15 heard concerns about it being casting our goals
16 too broadly and dooming ourselves to failure.
17 But, clearly, once we get into the health
18 category, I think we can agree what we want to
19 measure. I mean, the risk factors are pretty
20 well-known, and I don't think it would be hard to
21 take the stuff that Dana mentioned, the three
22 there, add obesity or something, physical
23 activity, we could agree what to measure.

24 What gets harder is that defining the
25 interventions that actually are going to move

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1 that on a population basis is harder, outside of
2 tobacco perhaps, but there are some. The
3 Community Preventive Services at CDC is helping.

4 So we could define some of the interventions.
5 But as Kelly pointed out, those interventions are
6 not in the health care domain, they are the
7 policy changes like changing tobacco sales
8 policies, changing alcohol use policies, and you
9 need to get by -- and not just from the health
10 people around this table, but people from
11 external affairs and whatever.

12 So, am I right, Kelly, that one of the
13 things you're asking the Board to do is to help
14 improve the buy-in from the people you're going
15 to have to go to? I think it will be pretty
16 straightforward to have the Board approve we
17 think these things are important to measure in
18 terms of health, beyond health care delivery.
19 But I'm not as clear on what the process you see,
20 who you want, who needs to buy in that hasn't
21 bought in, and how can the Board frame our
22 recommendation in a way to get those people to
23 buy into it. I mean, the collaborative stuff
24 that Dana mentioned sounds like the right way to
25 go -- pick a few things that are important, bring

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1 lots of people to the table, and identify a few
2 things that you can change. But I'm sensing that
3 there's something more that needs to be done than
4 what they've been able to do.

5 COL. WOODWARD: Yes. I think you've
6 captured that beautifully. Part of what we're
7 describing, I guess, is what would sort of be the
8 strategic approach for Health Affairs. The
9 recommendation would be of most interest, I
10 guess, to Health Affairs, who could then be a
11 champion for a bigger DOD strategy to address
12 these issues, but it would require -- I guess
13 part of the recommendation might be the -- the
14 strategy might be that Health Affairs be the
15 champion in these other communities for these
16 couple of key issues because I don't know exactly
17 how that would play out in the long-term in terms
18 of whether it would reengage some other groups,
19 safety centers and others, would come together to
20 fall behind this agenda. I guess my concern is
21 Health Affairs shouldn't go it alone with some of
22 these risk factor things because we're not
23 resourced for it, for one thing, and we'll fall
24 back to preventable admissions and prescriptions
25 administered as our measures. So I think that's

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1 the challenge, what is the strategy for Health
2 Affairs to influence and shepherd along the
3 process that involves many other stakeholders
4 than the medical.

5 DR. OSTROFF: I'll let Dana make one
6 comment and then I'll reserve the last comment,
7 and we'll have to break for lunch.

8 COL. BRADSHAW: Obviously, it's
9 difficult -- because I went back and reread the
10 question, as I said, and it does seem sort of
11 broadly stated, but underneath this I think one
12 of the important things to recognize, because
13 it's been discussed, is part of it is we need the
14 database -- and I think you made this comment
15 earlier -- but need the database to assess these
16 risk factors. And some of them are done -- this
17 preventive health assessment idea that's already
18 been discussed and reviewed by the Board, some of
19 it would get picked up there, but part of it is
20 getting a database that's the same across all the
21 services. And we had the Health Risk Assessment
22 Program the Army had that was good.

23 One of the things that was intended to
24 replace that was the health enrollment assessment
25 review, that's now called, I think, Health

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1 Evaluation Assessment Review, where we can get
2 all those risk factors assessed the same way in
3 all the services, and also get a periodic
4 assessment of health status, and then that
5 information can be rolled into potentially being
6 part of a metric that then looks at interventions
7 in different populations, the difference being we
8 have the Behavioral Risk Factor Survey that's an
9 anonymous survey done periodically, but that's
10 the cross-sectional look and it's anonymous so
11 you can't link it back to an individual whereas
12 the Health Evaluation Assessment Review would be
13 individual data that you can go back and do
14 interventions and maybe get more epidemiologic
15 information out of, although some things like
16 alcohol use are better from the anonymous survey,
17 obviously. But that's one of the things I think
18 that even if you didn't do anything else but
19 endorse a better process. The HEAR originally
20 was supposed to be done by the Tricare management
21 folks through the contractors, and that process
22 failed. And I think if we just said that the
23 services will take it on and get funded for it
24 and everybody will do it, even that alone I think
25 would be helpful.

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1 DR. OSTROFF: Thanks, Dana. I must
2 confess I'm a pragmatists, and looking at the
3 various processes that have been used to measure
4 health, whether it's Healthy People 2010 or
5 whatever it happens to be, my recollection as we
6 went through that process was that, No. 1, you
7 had to have a measurable baseline and, if you
8 didn't have a measurable baseline, you couldn't
9 propose a 2010 objective. And, No. 2, you had to
10 have a definitive way of being able to measure
11 it. And, No. 3, you had to set a goal. And it
12 seems to me that that's a process that works
13 pretty well, and I think even in the health
14 sector, setting aside the health care arena, we
15 could set 500 different metrics to measure, and
16 you could have as many of them as you want, and
17 90 percent of them you could conceivably achieve.

18 What I'd like to do is I'd like to see
19 something nice and simple where you have a fairly
20 simple scorecard of 10 or 12 different items that
21 we can agree upon, that we can say these are the
22 really, really important ones and that we're
23 going to work our darnedest to have the baseline
24 that we can measure, and we're going to set
25 aggressive goals in saying that these are what we

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1 want to achieve, whether it's in five years or
2 whether it's in ten years, and everybody's feet
3 have to be held to the fire. It's not just
4 Health Affairs, it's everybody's commitment that
5 if we say the current proportion of smokers is 30
6 percent and we want to get it down to 15 percent
7 in ten years, that that's what we're going to do.

8 And what processes -- I mean, just set the
9 ingenuity of the various services to figure out
10 what the process is that they're going to use to
11 get that smoking level cut by 50 percent over the
12 next ten years, because they'll think of some
13 pretty creative ways to do it. I mean, I don't
14 think it's that challenging and difficult to
15 think that somebody can't come up with here's the
16 top ten and let's achieve them, and not try to go
17 all over the waterfront -- since we're at the
18 waterfront -- but not try to go all over the
19 place in coming up with the metrics for
20 everything. But they have to be measurable,
21 there has to be a baseline, and they have to be
22 aggressive and achievable. That's my
23 perspective.

24 DR. LEMASTERS: Focus on the recruit.

25 DR. OSTROFF: And recognize that

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1 there's a lot of stressors out there. I mean, if
2 there's one thing we're learning about with the
3 Iraqi pneumonias, it is that it's going to be
4 hard to achieve when you have all these
5 circumstances where everybody doesn't have
6 anything else to do but start smoking, and that's
7 a real problem.

8 Why don't we take a break. Rick, do
9 you have any logistics to tell the group about
10 for lunch?

11 COL. RIDDLE: Lunch is out here. We
12 have plenty for everybody that's here. We've got
13 about an hour, so just an orderly progression
14 through the lunch line and bring it back in here,
15 and we'll finish up in an hour and start this
16 afternoon.

17 DR. OSTROFF: Great. Thanks so much.

18 (Whereupon, at 12:02 p.m., the
19 luncheon recess was taken.)
20
21

22 **AFTERNOON SESSION**

23 (1:00 p.m.)

24 DR. OSTROFF: Let's get ourselves
25 organized for the afternoon session, since we

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1 have a couple more presentations to go, and then
2 we'll get to the fun part of the meeting.

3 Rick stepped out for just a second. I
4 think that there were a couple of announcements
5 that he wanted to make. Since he's not here, I
6 will read what he was going to say. Oh, there
7 you are. Well, I can say it. We're going to
8 meet in the hotel lobby at 1900 this evening, and
9 dinner is at the S&P Oyster House, which is in
10 Mystic. Dinner is open to all attendees,
11 however, you need to let Severine know if you
12 plan to attend no later than 1400.

13 COL. RIDDLE: The only thing extra I
14 need, for folks that are going tomorrow to the
15 Coast Guard Academy that are going to eat lunch
16 over at the O-Club, and that's open to everybody.

17 (Show of hands.)

18 Twenty-six. We'll come here in the
19 morning. So we'll meet again in the hotel lobby,
20 and then we'll carpool back over here. And make
21 sure you sign the roster, fill out the form, and
22 turn in your evaluation for CME credits for
23 tomorrow.

24 DR. OSTROFF: Okay. Why don't we move
25 to the afternoon presentations. Our first

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1 speaker for this afternoon is LtCol. Michael
2 Hartzell, from the Tricare Management Activity,
3 Health Program Analysis and Evaluation. And the
4 slides are in the briefing book, and for those of
5 you looking under Tab 3, there is a fairly thick
6 pile of information in Tab 3 and the slides are
7 actually right in the middle of it all, so you
8 have to sort of hunt it out. Take it away.

9 LtCOL. HARTZELL: Thank you, sir.

10 (Slide)

11 I'm going to present an overview today
12 of the MHS data systems capabilities and just a
13 general broad overview of what we have currently.

14 I'm going to do that first by giving you some
15 perspective on our mission, overall mission, give
16 you some numbers as far as the number of Tricare
17 beneficiaries and how much work we actually do in
18 our facilities on a weekly basis, then I'm going
19 to take you down to the local level and show you
20 what type of operational data systems we have in
21 place, then go up to the corporate level, the
22 enterprise level, how that data then feeds into
23 these corporate systems and, finally, with the
24 last three bullets there, try to merge a lot of
25 this stuff together and give you some summary of

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1 all that.

2 (Slide)

3 You probably have seen a slide like
4 this before, but data, as you know, is very
5 essential for both our force health protection
6 and also trying to optimize the care within our
7 MHS -- medical readiness, having a fit force,
8 casualty prevention, casualty care and management
9 -- and then the various optimization techniques
10 that we try to employ -- access to care,
11 provision of care, and then what we're talking
12 about today, population health, and then,
13 finally, managing the business. So data is very
14 important in all these aspects.

15 (Slide)

16 To give you some perspective, a
17 question came up earlier as far as the numbers of
18 beneficiaries that we actually service, and there
19 are the numbers. We have 8.7 million eligible
20 beneficiaries that we're talking about and, as
21 you can see there are about 1.6 million of those
22 are actually Active Duty, a little over 2.3
23 million are the Active Duty family members. But
24 we also service the retirees and their family
25 members, and they constitute about another 20

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1 percent, or 1.6 million. And then, finally, we
2 also have -- those are the 65-plus -- and then,
3 finally, we have the retiree and family members
4 under 65, and that's about 3.2 million. And with
5 Tricare for Life, that's a new Tricare program
6 that came into being 1 October of 2001 and,
7 basically, what we are now is second-payer to
8 other health insurance for those retirees past
9 age 65. So that's another segment of the
10 population that we do participate in some of
11 their health care.

12 (Slide)

13 And on a weekly basis, these are some
14 of our stats. We have about 15,000 admissions,
15 in patient admissions. We fill about 1.7 million
16 prescriptions, a little over 1.2 million
17 outpatient visits on a weekly basis. That
18 constitutes about 1.8 million claims that are
19 processed, even have 1800 births in our Military
20 Health System, and then, finally, a little over
21 400,000 telephone calls on a weekly basis.

22 (Slide)

23 So, to help congeal all this data,
24 first I want to talk about the local systems that
25 we have.

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1 (Slide)

2 And the primary operational system in
3 our MTFs is the Composite Health Care System,
4 CHCS, and that fulfills the various functions
5 that you see up there -- patient registry,
6 appointing, PCM assignment, order entry, and it
7 also communicates with other systems, also does
8 much more. And I'll get into a little bit more
9 detail with each of these systems later on.

10 The important point with the CHCS
11 system is that this does produce the SIDR, the
12 Standard Inpatient Data Record. So the take-home
13 message with CHCS is that it is a standardized
14 system throughout the MHS. It does capture data
15 and also provides the operational support within
16 the MTFs.

17 (Slide)

18 Here is a schematic of how the data
19 flows from CHCS. We get information from DEERS,
20 and I'll describe that in just a bit here, for
21 those that aren't familiar with it. The arrows,
22 of course, represent data flow. And where you
23 see two-way data flow, you can see where some of
24 those systems are. I'll briefly talk about what
25 the EAS system is, the PDTS, and the TPOCS. And

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1 then, finally, down there, CHCS is this system
2 right here. This is the Ambulatory Data System,
3 ADS, that captures all of our outpatient data,
4 and you can see flows of data that goes from CHCS
5 to ADS.

6 (Slide)

7 I won't spend too much time on this,
8 but basically this is the possible sources of the
9 data from the various systems within the patient
10 encounter. They get data screening and wellness,
11 from the physician/patient encounters, and
12 patient check-out, et cetera.

13 (Slide)

14 This is ADS, I'll mention that just
15 briefly there. That's the Ambulatory Data
16 Capture System. It's our encounter data, and it
17 does, as I alluded to, receive some important
18 data elements from the CHCS files. Those
19 elements include patient information, provider
20 information. And then while the patient is
21 there, other clinical, administrative, other data
22 is entered into that record. And some of the
23 changes in the data do not necessarily flow back
24 to CHCS, so that's important sometimes when
25 you're trying to do data analysis studies, to

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1 keep in mind that these two actually could be
2 separate systems, CHCS and ADS. And the take-
3 home message here for ADS is that it produces the
4 Standard Ambulatory Data Record, the SADR.

5 (Slide)

6 This is our financial data systems,
7 called EAS, and this is what captures all of our
8 local expense data, also captures workload data
9 from CHCS, et cetera.

10 (Slide)

11 TPOCS is our Outpatient Collection
12 System, and that's what we use to bill third-
13 party insurers and others involved in care of
14 military members for care that is provided in the
15 MTS. We receive patient insurance from CHCS, and
16 encounter data from the ADS.

17 LCDR. CULPEPPER: Mike, could you just
18 tell us what those acronyms stand for?

19 LtCOL. HARTZELL: Sure, I'll try to do
20 that. I don't know if you have one in mind here.

21 LCDR. CULPEPPER: All of them.

22 LtCOL. HARTZELL: When there are
23 acronyms that are used, I'll explain what those
24 are later on in the presentation. If I don't
25 cover something, I'll go back to it in the end,

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1 but I've got a lot of slides to cover so, if you
2 don't mind, we can do that that way. I'm not
3 really trying to -- because I don't know, but a
4 lot of these are actually -- I use them up front
5 as an acronym and then later on explain what
6 those are, but I'll try to do that in the future.

7 DR. LAUDER: What is CPT?

8 LtCOL. HARTZELL: CPT is clinical
9 procedure terminology.

10 DR. LAUDER: So far, it seems to me
11 we're talking only about data from the provided
12 in a military MTF, not Tricare system.

13 LtCOL. HARTZELL: Not yet. We also
14 have data that's collected on our purchased care
15 environment. I haven't discussed that yet. I
16 will.

17 (Slide)

18 Right now, again, I'm just giving you
19 some of the most important data systems that we
20 have locally, and trying to give you, again, a
21 general overview of how those systems fit to our
22 corporate data systems as well. So that's what
23 this schematic is trying to do, is showing you
24 again, up there at the top, the CHCS, each of the
25 MTFs, and this is our financial MEQS -- and don't

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1 ask me what that stands for because it's no
2 longer called MEQS, it's now EAS -- and I'll
3 explain what EAS is later on, but that's --
4 basically the take-home message is that this is
5 our financial data, cost data.

6 DEERS is the enrollment eligibility
7 system from Department of Defense, and this is
8 our managed care support contractors, our
9 purchased care right there that you alluded to,
10 this is all our care that comes from the outside.

11 And all these data streams flow into what's
12 called the MDR. This is our overall, overarching
13 MHS Data Repository. So this is the system that
14 collects all these various disparate data systems
15 and keeps it into one repository located in
16 Denver.

17 And then from this MDR, then we
18 actually go into and mine the data and produce
19 what are called these Data Marts, and I'll get
20 into what those data marts are later on, but
21 basically that's used to populate ad hoc reports,
22 populate some of our metric tools that we have
23 that I'll get into, forecasting tools, claims,
24 and then medical surveillance.

25 (Slide)

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1 So the Corporate Data Systems to
2 include -- I already talked about the MDR, which
3 is the MHS Data Repository. We also have a
4 repository for the financial data, the EASIV
5 Repository. And then we have a PDTS System
6 which is relatively new. That contains a lot of
7 our drug information, drug utilization review,
8 and I'll get into PDTS a little more in-depth and
9 in detail later on, but PDTS communicates with
10 the inpatient system, the CHCS, our various
11 Tricare providers that we have on the outside, as
12 well as our Tricare mail order pharmacy, TMOP.

13 (Slide)

14 We have a branch of TMA out in
15 Colorado, Aurora, that actually handles all of
16 our purchased care claims. They receive and then
17 do some edit checks on the various claims data
18 that comes from the outside. This information
19 then is provided to TMA-Aurora. And then, again,
20 like I said, they are the ones that actually do
21 the quality checks on that data and claims data,
22 and then send it back to the MHS Data Repository,
23 the MDR.

24 (Slide)

25 So, again, the MDR located in Colorado

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1 receives data from all those various systems, the
2 operating systems, CHCS, ADS, the drug system,
3 PDTS, and then our claims and our DEERS, our
4 enrollment systems. It's basically considered
5 within the Military Health System a one-stop
6 shop, contains a lot of the necessary data that
7 we need to do, and probably what you're
8 interested in looking at today for various types
9 of studies and analyses. It provides the files
10 for most of the data marts. We don't really
11 process the data -- or we don't really edit the
12 data, we process it, in that we don't necessarily
13 do quality checks on the data and actually change
14 the data, it's processed for usability later on
15 in data marts. So that's not that major of a
16 point. The only point I'm trying to make is that
17 the MDR is more of raw data. Then we actually
18 process that data so it's more user-friendly, if
19 you will, for use in some of the various data
20 marts that we have.

21 (Slide)

22 Now I'll get into some of the
23 specifics of each of these systems. I talked
24 about this in a little bit detail before. The
25 MDR, this is considered the "official" source of

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1 our Military Health System data. It contains
2 various items such as the person demographic
3 data, encounter data, claims data, reference
4 data.

5 (Slide)

6 And those are some of the data types,
7 data sources, that come into the MDR, and then
8 how often they are actually placed into the MDR.

9 I'm going to talk about many of these later on.

10 I've talked about some of them. If you have
11 specific questions at the end, I can always go
12 back to this slide but, again, in the interest of
13 time I'd like to just continue.

14 (Slide)

15 The other major supplier to our system
16 is from DEERS. The DEERS is the Defense
17 Eligibility and Enrollment System. It's located
18 in California, and it's actually a component of
19 the USD, Under Secretary of Defense for Personnel
20 and Readiness, but it's actually for the entire
21 Department of Defense, not just for the medical
22 system. And so it actually manages our
23 enrollment, our eligibility information, and
24 feeds that on a regular basis to the services, to
25 the MDR, about once a month, actually.

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1 And what DEERS is capture at the local
2 MTFs, when somebody enrolls into Tricare, that
3 information is entered into DEERS. DEERS then
4 captures that information and the data can then
5 get into the rest of the MDR via that mechanism,
6 so that the system at the individual MTF at CHCS
7 is connected to the vast system there through the
8 DEERS.

9 (Slide)

10 DEERS contains eligibility status,
11 enrollment status, type of sponsor, some of the
12 beneficiary demographics, phone numbers,
13 addresses, age, things like that, Medicare
14 status, Guard and Reserve Information, and other
15 key information.

16 (Slide)

17 And like I said before, receives the
18 data from the individual MTFs, also from
19 beneficiaries. There is a way to update
20 someone's DEERS information via the Web, so it
21 can come directly -- addresses, things like this,
22 marriage status, a beneficiary can actually
23 update their DEERS record individually; service
24 personnel offices, the ID card system, Medicare,
25 and our managed care support contractors all feed

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1 data into DEERS.

2 (Slide)

3 We then have a SIDR, which is the
4 Standard Inpatient Data Record. The SIDR is the
5 main data source that we have for inpatient, for
6 our inpatient records, and the SIDR file is
7 collected again at each of the MTFs via the CHCS
8 operating system. As it says there, it's
9 transmitted directly to the TMA component known
10 as EI/DS, Executive Information/Decision Support
11 Office. They are the ones who actually harvest
12 the data from the MDR. The SIDR is supposed to
13 be submitted within 30 days after disposition,
14 and usually that happens. You get a data stream
15 that is submitted between the 5th and the 10th of
16 each month, and usually data processing is
17 completed by the end of that month.

18 As it says here, the same data is sent
19 to both places. The SIDR is sent not only to the
20 MDR, but also various service agencies, or has
21 that potential for being sent to service agencies
22 other than from to EI/DS or the TMA operation.
23 That's not that major of a point except that,
24 again, the same data is being transmitted
25 simultaneously, it's not like it's being

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1 processed in different places differently.

2 (Slide)

3 So what's in a SIDR? The SIDR
4 contains detailed information about the patient,
5 the providers who treated the patient, the care
6 that was provided, where that care was provided,
7 and various other administrative information
8 about the stay.

9 (Slide)

10 What's done with SIDRs? Basically, it
11 can be used to compare to "peer" facilities,
12 those facilities, for instance, like one
13 outpatient facility to another outpatient
14 facility, or one small inpatient facility to
15 another small inpatient facility, and also for
16 services that you do not provide, it can also
17 look at how we manage care of patients within our
18 inpatient facilities.

19 (Slide)

20 Next is the SADR record, the Standard
21 Ambulatory Data Record. And, again, this is the
22 daily activity for outpatient facilities, any
23 outpatient record basically is put into a SADR
24 format. SADRs are supposed to be submitted
25 within 14 days after the appointment, and the

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1 data is transmitted and processed weekly within
2 the MDR. So, here the SADR's go directly to the
3 MDR. There isn't another duplicate feed
4 somewhere else to another service agency, it's
5 just one single source.

6 (Slide)

7 What is a SADR? SADR contains also
8 information about the patient, the providers, the
9 care that was provided, the work center where
10 that was provided, and very similar to the SIDR,
11 also other administrative information about that
12 stay.

13 (Slide)

14 And, again, very similar types of
15 studies and analyses that could be done with this
16 type of data. Productivity per work center,
17 comparing to other peer facilities, and then
18 managing the care of our patients.

19 (Slide)

20 This is basically our Worldwide
21 Workload Report, the WWR. And this is a snapshot
22 of the work that is actually provided within that
23 MTF. That's just another way that facilities have
24 to actually record the amount of work that's
25 being done, health care that's being supported

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1 within their facility. That's done within the
2 CHCS, within the operational system, and on a
3 monthly basis that Worldwide Workload Report is
4 sent to the services, directly to the services,
5 who then look at that information and apply
6 various corrections that they have that have
7 various service-specific corrections that they
8 may make that monitor completeness, and then,
9 finally, that service information agency,
10 wherever that is located, will then send that to
11 the MDR for inclusion.

12 (Slide)

13 And just a couple of caveats with the
14 WWR, again, it's mostly workload, it's only
15 workload that we're talking about here, it's not
16 really health care per se. Each service is only
17 reporting workload for its own MTF, and then
18 files are restructured or processed for easier
19 use within the MDR.

20 (Slide)

21 These are some of the things that are
22 in the WWR -- Fiscal year, patient category
23 code, treating location, what MTF actually
24 provided the care, and what parent that MTF
25 belongs to or what higher command, if you will,

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1 higher MTF, if you will, that MTF belongs to,
2 where the care was provided within the facility
3 in the MEPRS work centers -- I'll explain what
4 MEPRS is in just a bit -- various types of
5 workload data -- dispositions, admissions, days,
6 and on the outpatient side actual count of
7 visits, and then a very few other types of
8 ancillaries and other workloads.

9 (Slide)

10 MEPRS that I just mentioned earlier,
11 that's our health care cost and expensing system,
12 Medical Expense and Performance Reporting System,
13 and this is how DOD keeps track of health care
14 costs, keeps track of expense, manpower, and
15 workload within the MEPRS, and keeps track of
16 both direct and indirect expenses, full-time
17 equivalent data, salary data and, again, some of
18 the admissions, bed days, and other
19 administrative types of counters.

20 This data is captured and processed in
21 the EAS system, Expense Assignment System -- it's
22 now called EASIV -- and it's forwarded to the
23 Central Repository for Health Care Cost System,
24 the EAS Central Repository.

25 (Slide)

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1 The account structure for MEPRS is,
2 basically it's a code on each of the records, and
3 it indicates what type of care was provided and
4 basically where that care was provided within the
5 facility. So all inpatient care is coded A, and
6 all ambulatory care has the first digit of B, et
7 cetera. Ancillary care -- the lab, x-rays --
8 have as their first digit D. So, again, that's
9 services-wide standardized system for encoding
10 our health care cost records.

11 (Slide)

12 And someone asked earlier about
13 purchased care. This is care that's provided
14 outside of our MTF system. This is received when
15 a claim is made when somebody receives care
16 outside the MTF system, and that's captured on
17 what's called the HCSR, the Health Care Service
18 Record. The claims, as I said before, are
19 actually processed by our branch out in Aurora.
20 Providers have up to two years actually to submit
21 a claim, so that can make it difficult when
22 you're looking at data and trying to capture data
23 and care that's actually been given downtown,
24 realizing that there is a lag built into some of
25 these purchased care visits because we may not

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1 see the claim for up to two years, actually.
2 It's not that long, but they do have that
3 capability of submitting a claim up to two years
4 after the event. And as it says there, the
5 majority of claims are received within the first
6 three months of care.

7 Basically, we have the HCSRs broken
8 down into institutional HCSRs, as the name
9 implies, submitted by various health care
10 institutions, and non-institutional HCSRs, these
11 may be providers on the outside that may not be
12 affiliated with an institution or they might be
13 affiliated with another entity.

14 (Slide)

15 And, basically, we get claims for
16 almost anything, anything that derives a health
17 care cost on the outside, and those are some of
18 the major categories -- inpatient stays,
19 outpatient visits, equipment and supplies, home
20 health, hospice. There's many others, of course.

21 (Slide)

22 And this is what the HCSRs contain --
23 again, basic demographic information on the
24 patient, the provider, what providers actually
25 provide the provider ID, where that provider is

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1 located, what type of care was delivered, and the
2 billing and payment where there was allowed
3 charges, billed charges, other health insurance,
4 OHI, and then various other types of
5 administrative information.

6 (Slide)

7 This is the Pharmacy Data Transaction
8 Service that I alluded to earlier, PDTS. And,
9 again, like I said before, it's a relatively new
10 system, only been operational since the start of
11 the Fiscal Year 2002. The intended use of this
12 system is for patient safety. Basically, it's a
13 capture of all pharmacy data from our MTFs, our
14 retail managed care support contract pharmacies,
15 as well as our Tricare mail order pharmacies,
16 TMOP, and the whole idea here with PDTS is to
17 ensure that any drug interactions can be caught
18 and there's no other contraindications for that
19 patient receiving that specific drug. As you can
20 imagine, it's a wealth of data, and it's just now
21 beginning to yield some very important findings
22 to us. We're just now starting to really look at
23 some of the data within the PDTS.

24 (Slide)

25 And that's where the data comes from,

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1 basically from all of our MTFs, MTF pharmacies,
2 again the mail order pharmacies, over 40,000-plus
3 retail network pharmacies, and then even some of
4 the non-network retail pharmacies.

5 (Slide)

6 I've been talking about and basically
7 what I've heard so far this morning is almost the
8 entire discussion on automated data, our
9 administrative data. Also, I've heard a little
10 bit about our survey data, but there's also a
11 wealth of survey data that we do have, and we've
12 been collecting since '95, actually, in some
13 surveys much earlier than that, so there are
14 limitations, as has been pointed out before, to
15 some of the survey data but, again, just to make
16 you aware that we do have a wealth of survey data
17 that has been collected in a centralized fashion.

18 Our office, the Health Program Analysis and
19 Evaluation, currently has about ten different
20 major surveys that go DOD-wide, and I'll explain
21 just a very few of those.

22 (Slide)

23 We administer on a quarterly basis a
24 customer satisfaction survey, the health care
25 survey of DOD beneficiaries, a purchased care

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1 survey on an annual basis, inpatient survey as
2 well, and then we also have a brand new Employee
3 and Provider Satisfaction Surveys, and I'll talk
4 about just a couple of those, the Customer
5 Satisfaction Survey being first.

6 (Slide)

7 As you can see there, it started back
8 in January of '97, and it is now worldwide. All
9 of our MTFs are surveyed on a monthly basis. And
10 the questionnaire -- skipping the survey area --
11 the questionnaire itself consists of 17 multiple-
12 choice questions based on the HEDIS NCQA
13 Standards.

14 So, what they are trying to ascertain
15 is just how basically satisfied the customers
16 were, the patients were, with the visit to that
17 specific MTF. So, it's a very specific
18 encounter-based survey.

19 (Slide)

20 Satisfaction with access, quality, the
21 medical care, satisfaction with the clinic, and
22 then, finally, satisfaction with the health care
23 provider, interpersonal relationships.

24 (Slide)

25 The next is a population-based survey,

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1 the health care survey of DOD health care
2 beneficiaries. And that's been conducted
3 annually since 1995, and it's another large scale
4 mail survey that we do, but our sampling frame on
5 this one is our entire 8.7 million eligible
6 beneficiary population. And so we'll sample
7 Active Duty military personnel, the retiree
8 population, as well as the Active Duty family
9 members.

10 (Slide)

11 And here our focal area is we
12 basically follow about 45-question standardized
13 CAPHS format -- that's a Consumer Assessment
14 Health Plans, and CAPHS actually asks the
15 beneficiaries' ratings on how satisfied they were
16 with their overall health plan, overall health
17 care, ratings of their personal provider, getting
18 care quickly, getting care from a specialist, et
19 cetera. So it's a standardized format and allows
20 us to compare -- as was mentioned earlier, allows
21 us to compare how well Tricare is doing as an HMO
22 against other HMOs.

23 COL. GARDNER: What are the sample
24 sizes of these?

25 LtCOL. HARTZELL: The sample size for

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1 the health care beneficiary survey, again, we
2 sample 8.7 million beneficiaries, and quarterly
3 that breaks down to 45,000 per quarter, so about
4 180,000 per year sample size.

5 (Slide)

6 Now I'm going to talk about just a
7 couple of the data marts that we actually have in
8 place right now that contain data from the MDR.

9 (Slide)

10 First, I'll talk about the M2, or MHS
11 Data Mart. This is the MHS Management Analysis
12 and Reporting Tool, also commonly referred to as
13 M2, and that's been a very useful tool. It's not
14 that old actually, it's only been in place for
15 about two or three years now, but this is a very
16 useful source of processed data, and it's MHS-
17 wide summary and detailed data as well. Contains
18 summary files I think back to '98, if I'm not
19 mistaken, but also provides detailed person level
20 information within the last fiscal year. And
21 I'll show you some of the screen shots from the
22 query tool, but basically it's a very user-
23 friendly ad hoc query tool for endusers to be
24 able to do their own data analysis using
25 standardized data from the HDR.

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1 And, basically, we have plans in place
2 to deploy this Web-based -- that's not currently
3 right now, but we do have plans in place to
4 actually deploy the tool on a Web-based system.

5 And the targeted users, the endusers
6 for the data mart include, again, decisionmakers
7 at all levels to include the local MTF command,
8 Tricare Management Activity, the various lead
9 agents, and of course the services. And right
10 now there's over 800 accounts. Basically, those
11 are individual endusers or end-facilities that
12 are able to mine this data.

13 (Slide)

14 As I said, contains a subset of the
15 MDR data. It's processed data that comes from our
16 data repository, and so it will contain data
17 files from numerous data sources, to include the
18 WWR, Worldwide Workload Report, the SIDR, the
19 SADR, the HCSR, the purchased care data, the
20 financial EAS, and then the drug data system
21 PDTS.

22 (Slide)

23 And this is a very basic schematic of
24 the overview of the data flow. I've shown this
25 slide before but, basically, it's coming from the

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1 individual services MTFs, data sources into the
2 MDR where it's processed -- truncated, if you
3 will -- and then turned into the user-friendly
4 form into the data mart M2.

5 (Slide)

6 These are some of the characteristics
7 of the M2. It's very easy to use. It doesn't
8 take long to learn how to use that. And the
9 beauty of it, again, is that the data is all
10 standardized. As long as the methodology is
11 correct as far as how they are coming up with
12 their certain analyses, then people can be
13 assured that the answer they get is a
14 standardized answer, point-and-click navigation -
15 - and, again, I'll go through a couple screen
16 shots. It's the commercial software Business
17 Objects Based, and the computer language SQL
18 driven, so it's, again, very usable type of
19 computer programming behind the scene. SQL is a
20 program language that's recognized by many
21 different systems. It's a query tool and can
22 allow you to export into various spreadsheets, to
23 include Excel.

24 (Slide)

25 These are some screen shots, and on

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1 the left-hand side you'll have an overview of the
2 entire data system from the M2, what is available
3 basically to look at, and those are arranged into
4 objects or directories.

5 (Slide)

6 And then basically it's just point and
7 click, so they expand out the menu on the left.
8 They double-click and select a directory and can
9 move that into the box up on the right to see
10 what is going to be in the report, what they
11 actually want the analysis to include.

12 (Slide)

13 Various conditions, if it's going to
14 be limited by certain month or certain year,
15 certain time span, they're looking at a certain
16 ICD9 code, those are the various conditions that
17 they would actually list and have the capability
18 of listing within the bottom, right screen. So,
19 it's a very, again, useful tool, very simply
20 applied, and a lot of users are able to get
21 quickly up to speed with the MHS data and how to
22 properly access this data.

23 (Slide)

24 The next system which is basically
25 another source of data or another form of a data

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1 mart is what's called PHOTO. Again, I think
2 you'll have some interest in PHOTO today because
3 PHOTO, in its beginning stages -- PHOTO stands
4 for Population Health Operational Tracking and
5 Optimization -- but in its very beginning stages
6 it was to be our population health tool. It was
7 going to contain data that was from the entire
8 MHS. It was going to include both summary level
9 as well as drill-down capability so that they
10 could actually drill down to the individual
11 provider, health care provider. It was going to
12 be Web-based and have a very simple interface.
13 And the targeted users, very similar to what M2,
14 decisionmakers at all levels. So that was the
15 grand overall design with PHOTO, and we're almost
16 there. We've come a long way since the beginning
17 of the implementation of PHOTO, but it does have
18 some drawbacks, and I'll explain those in just a
19 minute.

20 (Slide)

21 So, what does PHOTO measure? Various
22 measures are listed up there. Has 15 current
23 measures that are available, and it is defined by
24 the MHS, Military Health System Optimization
25 Team, it's validated by Dr. Opsut's group, the

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1 TriService Metrics Working Group, and a
2 Standardization Board, and it contains dimensions
3 such as best clinical practices, measures best
4 business practices, population health
5 improvement, and patient satisfaction.

6 And I don't know if this was in your
7 notes or not, but the nine measures that we
8 currently have -- clinical measures, anyway, that
9 are currently in PHOTO -- and not all of them are
10 for public use yet, they haven't been thoroughly
11 vetted through the entire process -- but the nine
12 that have been planned anyway for eventual use
13 include breast and cervical cancer screening, the
14 prenatal care and first trimester, follow-up
15 after hospitalization for mental health, checkup
16 after delivery, beta-blocker after MI, eye exams
17 for diabetes, asthma management, and smokers
18 advised to quit smoking. So those are the nine
19 that are currently in PHOTO. Currently we
20 actually can collect administrative data,
21 automated data on these nine measures.

22 And the focus again with PHOTO down
23 there, that's an important point, Tricare prime
24 enrollees. That was the overall focus with PHOTO,
25 so that is one limitation, that we're really only

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1 looking at the persons who have actually enrolled
2 to our Tricare prime health plan. And it was to
3 give a snapshot of the total care of that group
4 individual, comprehensive view of both their MTF
5 as well as any network encounters, and there are
6 some limitations with that as well, again,
7 because obviously any network encounter, anything
8 outside the MTF, very hard to capture that data -
9 - not so much the claims data, obviously, since
10 we have the HCSR for that, but for lab, x-ray and
11 items like that it's very difficult to capture
12 that data -- in fact, impossible right now.

13 (Slide)

14 So what does PHOTO do? PHOTO
15 integrates our MHS data and business rules. And,
16 again, on the left-hand side is where those
17 business rules come from and what type of data
18 goes into the various business rules, and then
19 the PHOTO measures, the nine that I just
20 described, have been approved, vetted through the
21 services and TMA.

22 (Slide)

23 One of the -- not problems -- but
24 difficulties with use PHOTO right now is that we
25 only have a certain limited number of accounts.

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1 And, currently, it's approximately about 280
2 users that we have, and so it really limits our
3 availability of getting a snapshot of where we
4 stand with these various clinical measures
5 throughout the entire MHS if we can only
6 disseminate this out to 280 users right now.

7 And the other limiting factor right
8 now is that down here where it says Phase III,
9 this is just in development as we speak. The
10 whole plan of PHOTO was to be able to provide
11 information down to the health care provider
12 level, what types of clinical services their
13 patients may need. We're not there. All we have
14 is the aggregate data at this time, the summary
15 data. We're not at the PCM level detail at this
16 time. And I can show you some of the screen
17 shots that may clarify that just a bit.

18 (Slide)

19 So, when you go onto the PHOTO
20 Website, this is what the main screen looks like.

21 (Slide)

22 And right there you can see just a
23 general description of what measure they're
24 actually looking at, whether it's breast cancer
25 or cervical cancer.

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1 (Slide)

2 And you can see the description by
3 clicking on the various -- it's all hyperlinked,
4 and by clicking on the various hotlinks you can
5 actually describe what it is that that measure is
6 supposed to be measuring.

7 You can see the calculation of the
8 metric. We have the standardized calculation in
9 there. And so, for the most part, a lot of these
10 measures are HEDIS-like. This is where, again,
11 Dr. Opsut was describing earlier, that's been
12 somewhat the difficulty in trying to follow
13 straight HEDIS methodology because some of our
14 enrollment data, for instance, it's very
15 difficult to say whether one person is enrolled
16 to Tricare overall, or is it the health plan at a
17 specific MTF, who is actually responsible for
18 that individual's health care. And so it makes
19 it difficult in abiding by strict HEDIS standards
20 and definitions. But, again, the good thing that
21 PHOTO has done is actually put up on the Website
22 exactly how it is calculated, what the
23 methodology is, so there's no question on how
24 they came up with that number.

25 (Slide)

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1 It also explains where the data
2 sources, what they include, where they come from,
3 where the data from the direct care source,
4 purchased care source comes from. It also
5 explains the reference tables that are used.
6 Those are reference tables that are in M2 that
7 might be helpful in further explaining what that
8 measure is all about and how it's calculated.

9 Talks about the numerator methodology,
10 and also explains -- I don't know if that shows
11 it -- but also explains the denominator.

12 (Slide)

13 This is another screen shot of PHOTO,
14 and basically shows the initial view when you're
15 getting into the metric itself. You can drill
16 down on the various buttons and task bars up
17 above. You can look at service level, can look
18 at by MTF, by region.

19 (Slide)

20 And then you can do various built-in
21 crosstabs.

22 (Slide)

23 And some further capabilities of PHOTO
24 breaking out the crosstabs and drilling down for
25 further analyses.

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1 (Slide)

2 (Slide)

3 And I think this is the last slide
4 there, and that's it.

5 DR. OSTROFF: Thank you. That was
6 quite overwhelming, I must confess.

7 LtCOL. HARTZELL: Forty-five minutes.

8 DR. OSTROFF: Let me open it up to
9 some questions and comments. I must confess I'm
10 learning new terminology. This is the first time
11 I've heard a terabyte. I guess I'm not quite a
12 techie. That sounds like a phenomenal amount of
13 data. How are you able to keep track of all of
14 this? I mean, there just seems to be enormous
15 amounts of information. I guess I would ask the
16 question, if you could blow this whole thing up
17 and start all over again, which of this is really
18 useful?

19 (Laughter.)

20 LtCOL. HARTZELL: Okay.

21 DR. OSTROFF: I mean, I understand a
22 lot of it's an administrative database.

23 LtCOL. HARTZELL: I think PHOTO
24 actually could be very useful because it offers a
25 snapshot, and it seems like what you've been

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1 tasked to do today is to come up with clinical
2 measures -- as one phase, anyway, clinical
3 measures that could be used to track improvement
4 in health, whatever that means or whatever you
5 come up with that definition. So, PHOTO is in
6 place right now as we speak, and so that is a
7 good progress that we've made in trying to tie in
8 data from over 560 different MTFs worldwide, and
9 get real-time data about our population. I think
10 this has been a very good effort, and so this is
11 something I would not want to see go away.

12 DR. OSTROFF: Well, I guess let me ask
13 the question in this -- I mean, it strikes me
14 that you're almost drowning in data. I mean, are
15 people actually able to use the data, look at the
16 data, try to figure out what the data are telling
17 them? I mean, even some of those measures that
18 you were mentioning -- when I provided medical
19 care in a Military Treatment Facility, there's
20 not a single person that I saw that I didn't
21 recommend smoking cessation for, that smoked.
22 And I'm not sure that that system is going to
23 capture that.

24 DR. OPSUT: This is basically
25 encounter data. This is basically claims,

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1 administrative claims data is what you're seeing.
2 You're seeing population, demographics and
3 claims data. There are some uniqueness to it
4 because it grew up, again, the way our systems
5 are, treatment data systems. And so primarily
6 it's simply a record of what happened. What's
7 missing? I mean, some of the stuff that Kelly
8 talked about, we don't have population data per
9 se, population health data, so you don't have a
10 patient-centered, and you don't have things like
11 who is a smoker. You don't have that sort of
12 information on any of this data.

13 What you have is "I saw this person, I
14 treated him this way, and this is what I treated
15 him for". Some of the cost data is a little
16 suspect. The size is simply a function of how
17 big we are. I mean, with 8 million beneficiaries
18 and the numbers to be listed, it's just a matter
19 of a huge center of outpatient visits and
20 inpatient stays. But more than anything, from a
21 population health standpoint, the biggest thing
22 we're missing is the stuff that's unique to the
23 individual. It's not treatment-centered, but
24 patient-centered, if that makes sense.

25 DR. BLAZER: I'd like to ask a

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1 question along those lines. What's happened to
2 the HEAR?

3 DR. OPSUT: I'm not sure if I'm the
4 HEAR expert because I'm not sure if there is a
5 HEAR expert anymore, but we tried. It hasn't
6 succeeded very well. The response rate was
7 extremely small, and it proved not to be useful.

8 But Ken is more the expert on that.

9 COL. HOFFMAN: Actually, the
10 Integrated Process Team I think spent three and a
11 half years coming up with the questions that -- I
12 think it's a Yale study, it's on the question --
13 that actually had an interesting recommendation,
14 which was that it looked like to be a common core
15 of questions that would be configured to address
16 different populations of interest, like a 17-
17 year-old male would probably get a different set
18 of questions than the 35-year-old female, Active
19 Duty deployment, you try to scope that all into
20 it. But the way it ended up is that the services
21 ended up with some fairly specific sets of
22 questions, so you have a small/medium/large,
23 large being -- looking a lot like the HEAR 2.1
24 with some branching logic, and I think that was
25 the strong preference from the Air Force.

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1 The Navy preferred a shorter version,
2 so it's a screening and/or an operational, which
3 is strictly for deploying troops or places where
4 medical care might be sparse. The net result of
5 all of that has been put onto a -- I mean,
6 there's a Website that has it on right now. We
7 paid a good chunk of money on a license fee for
8 this, and it's on a CD-Rom which I think at the
9 Force Health Protection Conference was
10 distributed to at least 40 or 50 MTFs. So one
11 can actually play with it if they want to, and it
12 does interpret, it does kind of go into an access
13 database, all the data elements, and I think
14 there are some folks that have had experience
15 kind of working with the access database on the
16 3.0 version, which is what they worked on at this
17 point.

18 What people are seeking at this point
19 is a definitive policy that would indicate how it
20 fits into the work flow and basically business
21 process. That's one of the areas that clearly
22 was not very well defined in terms of how all the
23 reimbursements -- or how the coding might go for
24 that. The HEAR actually is maybe a bit of a
25 poisoned acronym, but it's been so many different

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1 variants of it and very different business
2 processes. The one people think about most, I
3 think, relative to the current contracts is the
4 HEAR 1.3, which was that enrollment assessment
5 report that was part of the enrolling process, so
6 that the contractor then became responsible for
7 sending it out to prime enrollees, which would
8 actually be people enrolling to the MTF, not
9 necessarily all Active Duty who might be taken
10 care of within like on a ship or a division. The
11 contractor would then interpret that and deliver
12 the results back to the MTF, and then it was up
13 to the MTF to distribute or the PCMs to use them
14 as they saw fit, and that would be a 30-or-so-
15 plus to 90-day lag.

16 The 2.1 was configured into an Air
17 Force PHCA, Preventive Health Services, but it
18 was a suite of applications that included
19 prevention in practice, the HEAR 2.1, which is
20 the long version, that's the version that the
21 Yale study looked at in 2001, and the
22 immunization tracking. And then, as I say, the
23 work group took the Yale report and massaged it
24 into the 3.0. So one could actually play with
25 that today, if they wanted, and there is actually

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1 field interest.

2 Going back to some of the HRA
3 questions that came up earlier, the people that
4 actually are trying to provide a service at the
5 point of contact -- let's say a soldier is coming
6 into an in-processing station. They can go
7 through a survey, health risk identified, and
8 there's an immediate intervention that's returned
9 to that soldier as well as a tracking. That's
10 appealing to those people running those type of
11 programs. And so they are looking for some type
12 of product -- call it the HEAR or call it
13 something else -- that can be used in the context
14 of providing some of the preventive health
15 services at the time that they're the individual.
16 That's kind of where we turn to our past a
17 little bit, but that's kind of what the HEAR 3.0
18 I think is envisioned to have been going. It has
19 been mapped into CHCS2 in terms of the data
20 elements. That's a set of data -- I might be
21 taking you to more than you want to hear right
22 now -- but it can have a home fairly quickly into
23 Tricare online and CHCS2. So that's kind of
24 where at least the data elements are these days.

25 DR. OSTROFF: Kelly, and then Dr.

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1 Brown.

2 COL. WOODWARD: Kelly Woodward. I'd
3 like to just address actually your initial
4 comment, Dr. Ostroff, about how overwhelming this
5 is, and I think that's part of the problem of
6 where we're at right now, is we're kind of in an
7 "analysis paralysis" problem here, and we have so
8 much -- these data need to be analyzed and
9 disseminated to reflect what are some priority
10 issues that we need to work on. I think we've
11 built a lot of capability in our data systems,
12 but, for example, with PHOTO, to expect that some
13 provider or some clinic manager would actually
14 wade through all these different data systems and
15 pick out the salient points for action I think is
16 unrealistic. I think what we need to do
17 is prioritize what people ought to be working on,
18 and analyze, and push the information out to
19 people and say "Air Force, explain your
20 performance on breast cancer screening", and then
21 the Air Force cascades that down to Kelly
22 Woodward's clinic and says, "Kelly, you're
23 dragging our statistics down", or whatever, but
24 to just make these tools available with no
25 framework for analysis or necessarily

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1 prioritization I think is a leap we need to make,
2 and I think in the Air Force, for example, we
3 learned this lesson over the last few years, and
4 we started developing "push" reports where we
5 pushed out all the way down through the
6 enterprise to the primary care manager, "Here are
7 the patients that you need to call, who need this
8 service", not "Here's the other 80 percent who
9 already had the service, we don't need you to
10 look at that. Here are the ones who need action,
11 what are you doing?"

12 DR. OSTROFF: There are probably other
13 people around the table that have vastly more
14 experience with administrative databases than I
15 do, but most of our experience is that they are
16 much better known for quantity than for quality.

17 And trying to use them for meaningful
18 epidemiologic purposes, it's really extremely
19 limited. And so, I don't know, David, in terms
20 of any of the performance measures that are being
21 used by your agency or certainly by NCHS at CDC,
22 I don't know that too many of them actually rely
23 upon administrative databases as being considered
24 a quality data source.

25 DR. ATKINS: I think there are two

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1 issues. One is taking a big picture view, can
2 you identify places that are underperforming?
3 And it really depends on the differences you see
4 whether -- clearly, the data have flaws. If you
5 see big differences or you see big gaps, then you
6 have to make a judgment is it a problem with the
7 data or is it a problem with what you're doing?
8 And so I don't know if there's a blanket
9 judgment.

10 But then the second issue, in terms of
11 where information makes a difference, a lot of
12 times it's at the clinical encounter real-time
13 information, and this isn't solving that.

14 The other question I had is -- which I
15 guess picks up on Dr. Ostroff's first comment --
16 is anyone being held accountable for the data
17 yet? I mean, you have the data, but is it just -
18 - and even if you push it out to people, do you
19 expect them just to take their own initiative --
20 gosh, maybe we could do better with mammography -
21 - or is there an actual system to say "You are
22 going to be accountable for these five measures?"

23 MS. EMBREY: Can I make a comment?

24 DR. OSTROFF: Sure.

25 MS. EMBREY: I'm sorry I missed this

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1 morning's presentations because I think it would
2 have given some context to this response, but I
3 believe that this data is being used to help us -
4 - help inform us how we are managing the system
5 administratively, what is the level of activity
6 in the system. I think that became very
7 important to us in terms of efficiency and those
8 kinds of things. It does not help us in terms of
9 surveillance from a preventive medicine
10 perspective because it doesn't contain the kind
11 of clinical information that we need to draw
12 meaningful conclusions.

13 So, I think that Dr. Tornberg's
14 question and my own question is what is it that
15 we really do need to be capturing to have
16 meaningful surveillance -- you know, preventive
17 medicine kinds of activities, population health.

18 How can we infer from metrics what we need to be
19 doing across our system?

20 I don't believe that the data that we
21 have here was ever designed to help us do
22 preventive medicine or any kind of health
23 surveillance, other than to let us know outcomes.

24 I think our focus now is much more at the
25 patient level, at the clinical level. We need

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1 different kinds of registries. We need more
2 granular pieces of information to help inform us
3 what our baseline is and what we need to now do -
4 - you know, if we make a change in our policy or
5 the way we do business, whether that actually
6 improves it or makes it worse. And so I think
7 that is part of our challenge, is trying to get
8 information from data and focusing in on getting
9 the right data.

10 And if we are truly trying to be
11 proactive and be more preventative rather than
12 reactive, then we need to be focused on capturing
13 the right data that are indicators of whether or
14 not what we're doing is giving us the desired
15 result. And I think the PHOTO tool would be very
16 useful once we picked out what granular pieces of
17 information we need, but I don't think we're
18 there yet. We don't have good mortality data
19 even in this system. So we need much better data
20 than what we have, and we need it well analyzed
21 by people who know what to do with this
22 information because it's fairly inaccurate, too.

23 DR. OSTROFF: Grace.

24 DR. LEMASTERS: I was wondering how
25 you might plan to use the claims data. It seems

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1 like that information could be pretty powerful if
2 you're talking about decreasing costs or trying
3 to decide where to do interventions as we were
4 talking this morning, or if you were looking at
5 the claims information for beneficiaries and you
6 were wanting to target where do we need to begin
7 with decreasing costs, et cetera.

8 So, I was just wondering if you all
9 feel that the claims information, if you know the
10 denominator, how many people are potentially able
11 to file a claim, and the numerator, how many
12 actually did file a claim, if you couldn't do
13 some tracking of that claim information over time
14 and would expect to see either decreasing or
15 increasing trends, or at least really surveilling
16 it year-by-year to see what's happening, really
17 use that claims data as a surveillance tool. Is
18 that possible? It seems like that could be
19 powerful in looking at trends over time.

20 LtCOL. HARTZELL: Bob, do you want to
21 comment on that?

22 DR. OPSUT: Bob Opsut, again. Yes,
23 that's sort of what we do now. And, again, in
24 terms of what Ms. Embrey says, in terms of cost
25 data, we come up with a PMPM, and we come up with

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1 days per thousand, we come up with utilization
2 rates and the like, and we can do it down to MDC
3 level and the like. But I'm not sure -- what
4 that doesn't get us is outcomes, which requires
5 much more specific information than what you get
6 on a claim, and that's sort of what we're doing.

7 But, yes, we can track and see why are bed days
8 per thousand going up in terms of -- you know, is
9 it pregnancy related, or is it orthopedics
10 related, or questions of that, we do that
11 routinely. It's just that when you get to some
12 of the other preventive services type
13 information, there's nothing on the claims that
14 says what percentage of our people smoke, or what
15 percentage of them have alcohol abuse, or the
16 like. So it's limited in that sense.

17 DR. OSTROFF: Okay. A couple more
18 comments or questions, and then we have to move
19 on to try to keep on schedule. Greg, and then
20 Margot.

21 DR. GRAY: This is Greg Gray. I think
22 these data -- the SIDR, the SADR, the pharmacy
23 database, and DEERS can be used good for
24 retrospective studies, particularly those that
25 are outcome-based with a targeted diagnoses, and

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1 we've had tremendous success in that. And in
2 some ways you can call that surveillance,
3 particularly if you look for trends for defined
4 populations such as Active Duty personnel that
5 you know are going to have a high probability of
6 using the services and not civilian services.

7 Additionally, the pay-for-service
8 database is useful for diseases that are
9 relatively rare such as ALS, and that was used in
10 the Joint DOD/VA study of ALS to search for
11 cases. So while you don't have a good
12 denominator, as Grace was wondering about,
13 because both civilians and retirees can use that
14 database, you can use the numerator to identify
15 cases.

16 And, finally, the pharmacy database
17 can be used in a similar fashion. You can search
18 for pharmacy use. It's very unique for certain
19 diseases. But these systems are administrative,
20 they are not what we are focusing on today, and
21 that is sort of health risk preventive medicine.

22 COL. KRAUSS: This is Margot Krauss.
23 I guess I'm going to echo a lot what Dr. Gray
24 just said. I think if we have specific
25 questions, specific disease entity, we can design

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1 a study to use these administrative databases,
2 and we can get some very useful information out
3 of them. I think routinely using them to monitor
4 the health of the population I can't see would
5 work.

6 Also, our data undergoes a lot of
7 manipulation, and depending on where you're
8 getting it in the system -- even though I
9 understand the SIDR goes to the services and EIDS
10 at the same time -- I've actually looked at two
11 systems and I can get different answers. So I
12 don't really want to go down that route.

13 DR. OSTROFF: Kelly, one more comment.

14 COL. WOODWARD: Just a comment coming
15 all the way back to the issue of data quality,
16 while I guess I'm equally concerned about how
17 much data we have and how little information
18 we're getting out of it, I think the data quality
19 piece is something that -- the only way we can
20 fix the data quality is to use the data. And in
21 the Air Force, we've launched a long, long, long,
22 long-term venture to start using the data which
23 gets us in the process of getting over all the
24 arguments about who's responsible for fixing it.

25 So, when MTF commanders say "that

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1 can't be right, there must be something wrong
2 with the data", and then we say "But you entered
3 the data", so then they go back and say "Oh.
4 Okay. Well, I guess we'll fix that". And that
5 led us to, for example, a lot of these -- a lot
6 of the value in there is some of the coding
7 information in the SADR, and if you have accurate
8 coding -- I mean, coding is the language by which
9 we capture what we're doing in terms of diseases
10 and conditions and procedures, and if you can get
11 that very accurate, which we have tried to do
12 through using the data, then I think it becomes
13 much more useful. But you have to step off that
14 precipice and say "We're going to start using
15 this imperfect data before it gets better".

16 DR. OSTROFF: Other comments? David,
17 you get the last word, then we'll have to move on
18 to our next presentation.

19 DR. ATKINS: Well, to pick along
20 Kelly's point, is the only incentive for accurate
21 coding -- there has to be an incentive to do it
22 right. In the private sector, the incentive is
23 you don't get paid for it unless you do it right.
24 But, here, that's not always true.

25 And so are you building in the

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1 incentive so that it's worth the extra time it
2 takes to make sure they are coding each of the
3 services completely?

4 COL. WOODWARD: There are a couple of
5 parts to the incentive. One is we've actually
6 now put assigned values, if you will, dollar-
7 based values to the care people are providing.
8 So if you do more complicated care, a more
9 complex diagnoses, you get more points, if you
10 will, for how hard you're working. And
11 then the other thing is that we start using the
12 data and people want to know who really has
13 diabetes because they don't want to spend their
14 time taking care of somebody who was miscoded
15 with diabetes, who they are now being told they
16 need to arrange a retinal exam. So there is an
17 incentive to do the right thing within our
18 system, and the other part is there is an
19 incentive to get sort of positive workload feeds.

20 DR. OPSUT: We're implementing a new
21 budgeting process that will, in fact, pay the
22 services or the MTFs based on, again, a weighted
23 workload unit that's based on the CPT codes and
24 the diagnoses.

25 MS. EMBREY: So they'll get funds

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1 based on what they've coded, so if they've done a
2 lot of very low-level stuff, they're not going to
3 get --

4 DR. OPSUT: And along with that, we
5 have put in the auditing processes to make sure
6 that they don't overcharge.

7 DR. CATTANI: Can I make a point?

8 DR. OSTROFF: If you make it very
9 quickly.

10 DR. CATTANI: You know, that's how the
11 private sector got in trouble with ICD9 coding in
12 insurance companies because they code things so
13 that they get paid more, and therefore you cannot
14 use ICD9 codes from the private sector because
15 it's totally biased by what insurance companies
16 reimburse for. So that's a dangerous path.

17 DR. OSTROFF: Agreed, there are many
18 issues here. Col. Hartzell, thank you very much
19 for that presentation. I'm amazed at the
20 enormity of the task that you have, just simply
21 keeping track of all these different systems.
22 Bless you for being able to do that.

23 Our last presenter of the afternoon is
24 an old friend to the Board, Col. Withers, who is
25 going to talk to us about something that I

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1 actually understand a little bit about, surety
2 inspections and, Ben, I didn't realize that you
3 are with the Inspector General, and I've also
4 heard rumors that you may not be there that much
5 longer.

6 COL. WITHERS: Well, I've been there a
7 year, and I'm going to retire in February.

8 DR. OSTROFF: Congratulations. We'll
9 be sorry to see you go.

10 COL. WITHERS: Well, it's a
11 bittersweet decision, I'll tell you.

12 Good afternoon, everybody. Ms.
13 Embrey, Dr. Ostroff, members, speakers, and
14 guests, it's great to be back.

15 (Slide)

16 Today we're going to discuss the new
17 Army Biological Surety Program. You can all
18 relax, this is not related to a question to the
19 Board, so it should be a fun lecture for you.

20 The language is unfamiliar to many of
21 you of surety, perhaps, so feel free to ask quick
22 questions just to clarify things as we go, and
23 we'll have a few minutes at the end as well.

24 (Slide)

25 If you'd like to use any of it again,

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1 just get with me and we'll make it happen.

2 Also, it's a program in development,
3 so things may change before it's finally issued.

4 (Slide)

5 There are several acronyms that go
6 along with surety programs. Let me cover a few
7 just so you'll -- this is in your handout.
8 You'll be able to refer back to this, but I do
9 want to cover a couple of them.

10 First of all, BDPR, Biological Duty
11 Position Roster. This is simply a list of
12 everyone that's in your "surety program", and it
13 gives about ten fields of information on them.

14 The second one, Biological Personnel
15 Reliability Program, or really any personnel
16 reliability program -- the others being nuclear
17 and chemical -- is a multi-faceted program which
18 ensures the reliability or the suitability or the
19 trustworthiness of workers. By multi-faceted, I
20 mean there's medical input, there is personnel
21 input, background investigation is part of it,
22 police records are checked, and drug testing is
23 part of it.

24 Biological Surety Inspection is a very
25 formal inspection that the Army IG will conduct

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1 every 24 months.

2 CO stands for Certifying Official.
3 It's not the commanding officer. It can be, but
4 what it really is is usually a second line or a
5 senior supervisor, and he or she is the person
6 that looks at all the data and makes a written
7 certification that this person is "reliable" or
8 "suitable" to be in the PRP.

9 PDI, Potentially Disqualifying
10 Information, is really any information that might
11 render a person to be unreliable in the judgment
12 of the Certifying Official.

13 And then SIP, Special Immunization
14 Program, is what you think it is. It's just an
15 immunization program for workers that are exposed
16 to dangerous biological agents.

17 (Slide)

18 Our United States Offensive Biological
19 Program ended in 1972. At the time, the Army was
20 the Executive Agent, and remains the Executive
21 Agent of the Defensive Research, Development and
22 Acquisition Program.

23 We really only have two regulations
24 that tell us how to conduct business, and they
25 are both quite old and out-of-date, as you see.

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1 Notice this very lengthy title. I just put that
2 there as a -- that's the most lengthy title I've
3 ever seen of any Army Regulation. It goes back
4 to 1979.

5 And then we have a slightly newer
6 regulation here that tells us how to handle
7 security issues. But, basically, these programs
8 lay fallow for many years.

9 (Slide)

10 Then there was 9/11. The War on
11 Terrorism began, the anthrax mailings occurred,
12 and there was great concern about the security of
13 our anthrax stockpile. In fact, we weren't
14 certain -- and may not still be -- that it wasn't
15 our anthrax that was mailed.

16 The Army Inspector General Office,
17 that's DAIG, was ordered to conduct a special
18 inspection. This occurred in November of '01,
19 and the IG was told to focus on accountability
20 and physical security of anthrax and other
21 dangerous biological products.

22 Moving on, the IG recommended that the
23 Army develop oversight mechanisms both at the
24 Army level and the Major Command level. When I
25 say Major Command, let me explain that the Army

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1 is divided into 16 Major Commands. Some you
2 might be familiar with would be Medical Command,
3 or MEDCOM; Forces Command is another one; three
4 MACOMs that own biological products are MEDCOM,
5 ATEC, and AMC, Army Materiel Command.

6 Moving on, the IG recommended that
7 there would be an inspection process, that there
8 would be drug testing for biological workers,
9 occupational programs, medical input to the
10 Certifying Official relating to the reliability
11 of workers, and that the programs would apply not
12 only to anthrax but to other dangerous biological
13 products.

14 (Slide)

15 So the Deputy Chief of Staff of the
16 Army, in February of '02, decided that we would
17 implement many of these ideas. The Army G3
18 became responsible for this action. There were
19 to be immediate safety, security and
20 accountability measures implemented. And then
21 over time the Army was to develop a more well-
22 developed and mature biological surety program.

23 (Slide)

24 So the Army G3 or Operations Division
25 sent out several interim messages between

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1 December of '01 and July of '03. These messages
2 announced an intent to establish a Biological
3 Surety Program with a Personnel Reliability
4 Program as the centerpiece. The messages
5 designed certain dangerous biological surety
6 agents that would be covered. It directed the
7 immediate accountability, security and safety
8 procedures, and it addressed the contractor
9 laboratories. It also asked for cost and
10 facility data, identified some gray areas that
11 the Army wanted input on from the laboratories.

12 (Slide)

13 These are the "designated" biological
14 surety agents, and these are the organisms for
15 which the immediate accountability, security and
16 safety for which measures were to be immediately
17 implemented.

18 (Slide)

19 We refer to the new Army Biological
20 Surety Regulation as 50-X. We do that because
21 nuclear surety is 50-V. Chemical surety is 50-
22 VI. 50-VII is already taken. It will be 50-
23 something. Anyway, it is in final development,
24 actually. The Personnel Reliability Program is
25 the centerpiece of it, and the regulation will

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1 integrate safety, security and reliability
2 programs and documents.

3 (Slide)

4 These are the chapter titles. I'll
5 give you a minute to take those in.

6 (Slide)

7 Biological Surety, unlike the other
8 programs, will be a two-tiered surety program.
9 This is a little unique to biological surety.
10 There will be biological select agents, which is
11 a much larger list of 36 biological products, and
12 there will be a high priority agent and toxin
13 list, which looks very much like the designated
14 list I showed you.

15 The biological select agents are going
16 to be designated by CDC, not DOD. We are going
17 to simply use a CDC list. It is found in 42 CFR
18 72.

19 The high priority agents and toxins
20 will be designated by the Department of Defense,
21 and this is basically the previous list of
22 designated agents plus the arenaviruses such as
23 Lassa and Machupo.

24 Now, just to organize your mind,
25 surety is the big umbrella. A surety program

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1 contains many -- a dozen -- supporting programs.

2 So surety is the big umbrella, and there will be
3 differences in the surety program according to
4 the two tiers. However, the centerpiece, the
5 Personnel Reliability Program, will be the same
6 for both tiers.

7 During initial evaluation -- that's
8 when you're evaluating a new worker -- there will
9 be an interview process, personal security
10 investigation, background investigation, drug
11 testing. There will be a risk assessment
12 rendered by the Attorney General, and then there
13 will be medical input -- in other words, a
14 physician or a trained nurse or PA reviews a
15 person's medical record and identifies physical
16 or mental condition, drugs, or anything that is
17 found there, which might affect this person's
18 reliability or suitability for this type of job.

19 During continuing evaluation, we do
20 the same things. We modify them, but generally
21 on a yearly basis or on a five-year basis, the
22 same sorts of checking goes on.

23 For the medical programs, there is
24 typically an annual encounter, and then anytime a
25 worker comes in for an occupational medicine

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1 visit the health care provider must decide
2 whether that encounter generates potentially
3 disqualifying information and, if it does, he or
4 she sends that information to the Certifying
5 Official.

6 (Slide)

7 This is the list of biological select
8 agents -- it's a little hard to read, of course -
9 - but as you see there are species from several
10 families. This list is, as I said, designated by
11 the CDC. There are 36 agents currently on it --
12 that can change. It also includes genetically
13 altered microorganisms that mimic the above.
14 These are things which are determined to be a
15 high bioterrorism risk and which may cause mass
16 casualties.

17 (Slide)

18 This is the HPAT, or high priority
19 agents and toxins list and, as I said, it is the
20 same as the original designated agents list plus
21 arenaviruses. These are the most dangerous
22 agents, and designated by DOD.

23 (Slide)

24 Some of the responsibilities of the
25 Surgeon General under biological surety will be

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1 to develop medical policies to support the
2 Personnel Reliability Program, to develop a
3 system of education, or GME, if you will, for
4 physicians who work at surety sites, and to
5 appoint a biological surety consultant to
6 himself, to the Surgeon General. These are sort
7 of strategic things, responsibilities of the
8 Surgeon General.

9 The MEDCOM Commander is the same
10 person, but with his operational mantle. The
11 MEDCOM Commander will be charged to develop
12 occupational health and industrial hygiene
13 programs in support, to provide a trained staff
14 at all of our surety sites, and to review and to
15 some degree oversee contract medical operations.

16 (Slide)

17 Other medical elements of the program
18 will include reliability standards. In other
19 words, what trips the wire, what things or what
20 medical events or diseases or drugs or whatever
21 define what is medical PDI, in other words.
22 There's always an area of controversy. I inspect
23 this all the time, and we are forever arguing
24 about what makes a person reliable, and it's
25 because it's a gray area. It's not particularly

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1 clearly defined in the chemical and nuclear
2 regulations.

3 Other medical elements will be
4 designated biological PRP positions, the fact
5 that a duty roster must occur, health records
6 will be identified such that providers know when
7 they are dealing with a person who is in the PRP.
8 That way they are better equipped to do their
9 part in it. There will be medical restriction
10 and disqualification. This can be temporary or
11 permanent based on conditions -- drugs, exogenous
12 factors, whatnot. There will be a biological
13 accident and incident response that will include
14 both medical and nonmedical parts, and then there
15 will be an inspection every 24 months. Right now
16 the chemical inspection cycle is 18 months, the
17 nuclear is 24, and biological will be 24.

18 More specific medical programs such as
19 the immunization program, personnel protective
20 equipment, surveillance examinations, these are
21 below the level that you would normally see in an
22 Army Regulation, and they will be covered by
23 probably DA pamphlets that the Army Medical
24 Department will write.

25 (Slide)

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1 These are where we expect our units
2 and locations will be that have biological
3 products which demand a surety program. Remember
4 that a biological surety program is agent-based,
5 not facility-based. Our clinical labs are part
6 of the laboratory response network, or LRN, and
7 they maintain reference samples for diagnostic
8 purposes, and then, in addition -- or actually
9 the last line -- addresses this. We have
10 probably -- oh, I'm guessing at this -- but
11 probably five or six contract operated labs such
12 as Bechtel in Akron, Ohio, or Midwest Research
13 Institute which actually has a lab in Florida
14 that does biologic work for the Army. We
15 probably will end up -- this is not certain yet -
16 - but we probably will end up only imposing
17 surety standards on those laboratories if we
18 supply the organism.

19 (Slide)

20 The regulation is in its final stages,
21 and should be out by January 1st.

22 Okay. Are there any questions?

23 DR. OSTROFF: Thanks very much for
24 that presentation. I'm sure that there are
25 probably a few questions. We have a rather

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1 limited time because we have to head out to the
2 buses in the next five minutes.

3 I will mention that among the many
4 hats that I wear at CDC, one of the other hats
5 that I wear is as the Director of the Select
6 Agent Program at CDC, so I oversee the program
7 that regulates and does 42 CFR.

8 COL. WITHERS: I hope I said that
9 right then.

10 DR. OSTROFF: And I will point out
11 that the list that you have listed there is
12 actually the old list, that's not the current
13 list of select agents. It was updated under the
14 new regulation in February of this year, and
15 there were several agents that you have on the
16 list that were taken off and others that were
17 added.

18 One question I have is -- and I know
19 that this has come up as an issue for DOD -- is
20 the overseas facilities, and I didn't see where
21 you had listed any of the overseas facilities.
22 And we, as a program at CDC, do not regulate
23 facilities that are outside of the United States,
24 and I know that there have been occasions where a
25 number of DOD overseas facilities have attempted

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1 to register with us under the Select Agent Rule,
2 and we've had to tell them that we can't regulate
3 them outside of the United States. And so what
4 are you doing in terms of security and surety for
5 facilities outside of the United States that
6 might contain one of these agents?

7 COL. WITHERS: The only one that I
8 believe --

9 DR. OSTROFF: Oh, there's more than
10 one.

11 COL. WITHERS: Are there? The only
12 one I know of -- again, I don't know the full
13 list. But, for instance, Lanschul (phonetic)
14 Army Medical Center is one of our labs in the LRN
15 has reference samples and will be inspected. In
16 fact, we were planning to inspect it this
17 December, but the regulation is not issued yet so
18 that will be delayed.

19 Tripler, if you call that overseas, is
20 also on the list. I suspect that our hospital in
21 Korea, the 121st, is also going to be on that
22 list, although I haven't seen that.

23 DR. OSTROFF: That's right, and all
24 the Navy facilities are certainly --

25 COL. WITHERS: Of course. I'm just

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1 describing the Army's Biological Surety Program.

2 These are things yet to be determined. It may
3 be that the Navy is required to standup their own
4 -- this was an Army decision. It was not imposed
5 on us by Department of Defense, so I don't know
6 what the Navy and Air Force plan to do about
7 this.

8 DR. OSTROFF: Other comments or
9 questions? Jackie.

10 DR. CATTANI: Jackie Cattani. I just
11 wondered what the implications of this would be
12 for university research programs that are funded
13 by, say, Edgewood, and we are already having
14 problems getting foreign national qualifieds,
15 since a lot of post-DOCs in universities,
16 especially in molecular biology, are coming from
17 the East. Will this have any implication on
18 those issues, or is that a separate issue
19 entirely?

20 COL. WITHERS: I think the way we are
21 going to deal with this is by not supplying the
22 organism to the laboratories that we use for
23 contract work, for the most part. Then we, the
24 Army, will feel less compelled to enforce our
25 rules on those laboratories. I'm certain we will

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1 make suggestions, but we will not be inspecting
2 and we'll not be requiring the labs to go by our
3 surety rules to do that work. That is, I think,
4 the way we are going to do it.

5 Let me get back to my last question
6 because I answered -- I thought it was something
7 else. The Army is still the Executive Agent for
8 the program, so another approach may be that the
9 Air Force and Navy simply don't have to develop
10 the programs, and they may be required to use the
11 Army program, and we might be the inspector. The
12 Army Inspector General might be the inspector.
13 Again, it's a program under development, and I
14 haven't heard the answers to these or heard them
15 discussed.

16 DR. OSTROFF: Barney.

17 DR. CLINE: Quickly, how do you see
18 evaluating the program? How will you approach
19 that?

20 COL. WITHERS: Well, very much like we
21 do chemical and nuclear programs now. We take a
22 team of ten people in for a week, and the
23 functional areas that are covered are medical --
24 that's me; security, we have two or three
25 Military Policemen; operations -- these in the

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1 chemical arena are chemical officers. In this
2 area, we will undoubtedly use laboratorians to
3 just evaluate safety, security and reliability of
4 lab operations, are they being done correctly and
5 that sort. And then surety management is done by
6 an officer experienced in this. Again, surety
7 management is looking over all the programs that
8 support the big surety umbrella. So it's
9 compliance inspection. It's fairly hard-nosed.
10 A lot of latitude. Well, a lot of latitude is
11 not allowed, it is pretty much a black-and-white
12 compliance with the regulation inspection. And
13 then we issue findings. We have criteria in the
14 regulation that gives our criteria.

15 DR. OSTROFF: We're going to need to
16 break, but I will also mention that the DOD
17 facilities are not exempted under the legislation
18 and the regulations that regulate select agents,
19 and so we also have to conduct inspections and we
20 have to oversee them, and all of the security
21 procedures that are in place under the civilian
22 select agent regulations also apply to DOD. So
23 the personnel have to go through the security
24 risk assessments and all the other things that
25 are required as part of that regulation, and I'm

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1 sure many of you who work on some of these agents
2 have some of the same difficulties in terms of
3 security plans and everything else that the
4 legislation requires, DOD has to fall under that
5 as well, and so we have a certain inspection
6 schedule. And so I guess this would be, to a
7 certain degree, double-regulation almost. Thank
8 you very much.

9 Okay. Rick, want to give us the
10 instructions?

11 COL. RIDDLE: Our vans are waiting
12 outside for the Board members. The tour is
13 scheduled to start at 3:00 o'clock, so if we will
14 go right out in front here, down the steps, and
15 then we'll all ride on the two vans, and then
16 we'll meet back here about 1630. If everybody
17 else wants to do the tour of the museum here, and
18 then the USS Nautilus outside, and we'll have the
19 Executive Session as quick as we get back, and
20 then hope to get out of here and back to the
21 hotel by 6:00.

22 (Whereupon, at 2:50 p.m., the meeting
23 was adjourned.)
24
25

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