

UNITED STATES DEPARTMENT OF DEFENSE

DEFENSE HEALTH BOARD

BOARD MEETING

Hilton Crystal City  
Chesapeake Room  
2399 Jefferson Davis Highway  
Arlington, Virginia, 22202  
Monday, November 14, 2011

1 PARTICIPANTS:  
2 Board Members:  
3 NANCY W. DICKEY, M.D., Chair  
4 MAJOR GENERAL (Ret.) GEORGE K. ANDERSON, M.D.  
5 M. ROSS BULLOCK, M.D., Ph.D.  
7 VICE ADMIRAL (Ret.) RICHARD H. CARMONA, M.D.  
8 ROBERT GLENN CERTAIN, Ph.D.  
9 GUY L. CLIFTON, M.D.  
10 REAR ADMIRAL PETER J. DELANY, Ph.D.  
11 JOHN V. GANDY, III, M.D.  
12 EVE HIGGINBOTHAM, M.D.  
13 COLONEL (Ret.) DONALD JENKINS, M.D.  
14 JAY A. JOHANNIGMAN, M.D.  
15 GENERAL (Ret.) RICHARD MYERS  
16 DENNIS S. O'LEARY, M.D.  
17 HONORABLE TOGO WEST, JR.  
18 Service Liaison Officers:  
19 BRIGADIER GENERAL MARK EDIGER  
20 LIEUTENANT COMMANDER PATRICK GARMAN  
21 CAPTAIN PATRICK LARABY  
22 MAJOR ROGER LEE

1 PARTICIPANTS (CONT'D):  
2 COLONEL ROBERT L. MOTT  
3 COMMANDER WILLIAM PADGETT  
4 COLONEL KATHERINE RICHARDSON  
5 COLONEL SCOTT STANEK  
6 Public Attendees:  
7 COLONEL (Ret.) FRANK ANDERS, M.D.  
8 JAMES P. BAGIAN, M.D.  
9 JOHN BALDWIN, MD  
10 COLONEL JEFFREY BAILEY, M.D.  
11 CAPTAIN (Ret.) BRAD L. BENNETT, Ph.D.  
12 FRANK K. BUTLER, JR., M.D.  
13 LIEUTENANT COLONEL STEVEN CERSOVSKY  
14 BARBARA COHOON, M.S.N., Ph.D.  
15 MARGARET CONSENTINO  
16 CAPTAIN CHRISTOPHER DANIEL  
17 WILLIAM DONOVAN  
18 COLONEL (Ret.) WARREN C. DORLAC, M.D.  
19 COLONEL BRIAN J. EASTRIDGE, M.D.  
20 COLONEL WARNER D. FARR, M.D.  
21 COLONEL MARK GAUL, M.D., M.P.H.  
22 CAPTAIN PAUL S. HAMMER, M.D.  
23 CAPTAIN JOSEPH HIBBELN, M.D.

1 PARTICIPANTS (CONT'D):  
2 SOCM SHAWN E. JOHNSON  
3 CHRIS KEEGAN  
4 JAMES W. KIRKPATRICK, M.D.  
5 LIEUTENANT COLONEL RUSS S. KOTWAL, M.D.  
6 COLONEL JOHN LAMMIE  
7 COMMANDER ROBERT LIPSITZ  
8 WARREN LOCKETTE, M.D.  
9 VICE ADMIRAL JOHN MATECZUN  
10 COLONEL JOANNE MCPHERSON  
11 NORMAN MCSWAIN, JR., M.D.  
12 BORIS MELNIKO  
13 SUSAN MILLER, M.D.  
14 SCOTT J. MONTAIN, Ph.D.  
15 EDWARD J. OTTEN, M.D.  
16 COLONEL TODD RASMUSSEN  
17 CHIEF MASTER SERGEANT THOMAS A. RICH  
18 MICHAEL ROTONDO, M.D.  
19 LIEUTENANT PETER SEGUIN  
20 D. ERIC SINE  
21 GEORGE PEACH TAYLOR, M.D.  
22 MAJOR GENERAL TOM TRAVIS, M.D.

1 PARTICIPANTS (CONT'D):  
2 WILLIAM UMHAU, M.D.  
3 DHB Staff:  
4 ALLEN MIDDLETON  
5 CHRISTINE E. BADER  
6 MARIANNE COATES  
7 CAMILLE GAVIOLA  
8 COLONEL WAYNE E. HACHEY  
9 OLIVERA JOVANOVIC  
10 JEN KLEVENOW  
11 ELIZABETH MARTIN  
12 HILLARY PEABODY  
13 JESSICA SANTOS  
14 KAREN TRIPLETT  
15 STEVE CASEY  
16 Court Reporter:  
17 STEVE GARLAND

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

(9:32 a.m.)

DR. DICKEY: Welcome to this meeting of the Defense Health Board. We have lots of important topics to discuss. A few data. Look at the size of our public participants today. And so in hope that we can stay on our agenda, let's go ahead and get started.

Ms. Bader, would you please call the meeting to order?

MS. BADER: Thank you, Dr. Dickey. As the Alternate Designated Federal Officer of the Defense Health Board, a federal advisory committee and a continuing independent advisory body to the Secretary of Defense, via the Assistant Secretary of Defense for Health Affairs and the Surgeons General of the military departments, I hereby call this meeting of the Defense Health Board to order.

DR. DICKEY: Thank you, Ms. Bader. Now, carrying on the tradition of our board I ask that we stand for one minute of silence to honor those we are here to serve, the men and women who serve

1 our country.

2 (Minute of silence)

3 DR. DICKEY: Thank you. Ms. Bader, the  
4 DHB Director, has some administrative remarks for  
5 us before we begin the morning session.

6 MS. BADER: Good morning again, and  
7 thank you, Dr. Dickey.

8 First, I would like to thank the Hilton  
9 Crystal City Hotel for assisting with the  
10 arrangements for this meeting and the speakers who  
11 have all worked very hard to prepare their  
12 briefings, as well as the DHB staff. Jen  
13 Klevenow, Jessica Santos, Lisa Jarrett, Liz  
14 Martin, Hillary Peabody, Olivera Jovanovic, and  
15 Ms. Jean Ward.

16 Please sign the board attendance sheets  
17 on the table outside of the conference room if you  
18 have not already done so, and please indicate any  
19 recent change to your contact information if it is  
20 not accurately reflected on the list.

21 Restrooms are located just outside of  
22 the meeting room, down the hall to your left. And

1 for telephone, fax, copies, or messages, please  
2 see Jen Klevenow as she enters the room.

3 Refreshments will be made available for  
4 both morning and afternoon sessions, and we have a  
5 working lunch in the Potomac Room for the Board  
6 members. This will be a working lunch. Federal  
7 Agency Liaison Officers and Service Liaison  
8 Officers are invited as well.

9 For those looking for lunch options, the  
10 hotel restaurant is open for lunch. There are  
11 several dining options all within a mile of the  
12 hotel. If you need further information, please  
13 see the hotel front desk staff.

14 For those of you joining us for dinner,  
15 we will convene in the lobby at 6:15, as opposed  
16 to the 6:00 I mentioned to the board members  
17 earlier this morning. It will be 6:15, to walk to  
18 the restaurant. And again, the restaurant is  
19 located less than a mile from the hotel. The cost  
20 of the dinner is \$35. If you would like to attend  
21 and have not already done so, please provide \$35  
22 in cash to Jen Klevenow so that she can prepay and

1 inform the restaurant.

2 Thank you very much.

3 DR. DICKEY: Thank you, Ms. Bader. I'd  
4 like to start the meeting by going around the  
5 table and requesting that all members briefly  
6 introduce themselves.

7 I'm Nancy Dickey. I'm the Chair --  
8 President of the Board and the President of Texas  
9 A&M Health Science Center in College Station.

10 MS. BADER: Good morning. Christine  
11 Bader, Director, Defense Health Board.

12 DR. CARMONA: Good morning. Rich  
13 Carmona, Vice President, Defense Health Board.  
14 Former Surgeon General, distinguished professor at  
15 University of Arizona.

16 DR. LOCKETTE: I'm Warren Lockette,  
17 Deputy Assistant Secretary for Clinical and Program  
18 Policy and the Chief Medical Officer for  
19 TRICARE.

20 DR. ANDERSON: George Anderson,  
21 Executive Director of the Association of Military  
22 Surgeons for the U.S. and a retired Air Force

1 medical officer.

2 DR. HIGGINBOTHAM: I'm Eve Higginbotham,  
3 Visiting Scholar in Health Equity at the  
4 Association of American Medical Colleges and  
5 formerly the senior VP for Health Sciences at  
6 Howard University.

7 DR. JENKINS: Don Jenkins, Chair of the  
8 Trauma Injury Subcommittee and Chief of Trauma,  
9 Mayo Clinic, Rochester.

10 DR. BULLOCK: I'm Ross Bullock. I'm  
11 Director of Neurotrauma Care at University of  
12 Miami and Professor of Neurosurgery.

13 DR. BALDWIN: I'm John Baldwin,  
14 Professor of surgery, Texas Tech University Health  
15 Sciences Center.

16 DR. CLIFTON: Guy Clifton, Clinical  
17 Professor of Neurosurgery, University of Texas  
18 Health Science Center Houston and Professor of  
19 Surgery, Uniformed Services University.

20 MAJ GEN ROBB: Doug Robb, Joint Staff Surgeon  
21 at the Pentagon.

22 MAJ GEN TRAVIS: Tom Travis, Deputy Surgeon

1 General, U.S. Air Force.

2 DR. JOHANNIGMAN: Jay Johannigman,  
3 Trauma Surgeon from Cincinnati, Ohio.

4 RADM DELANY: Pete Delany. I'm the  
5 Director of the Center of Behavioral Health  
6 Statistics and Quality at SAMHSA, part of HHS.

7 DR. CERTAIN: I'm Robert Certain,  
8 retired Air Force chaplain and currently an  
9 Episcopal priest in Atlanta, Georgia.

10 DR. GANDY: John Gandy, emergency  
11 medicine physician, retired from the U.S. Air  
12 Force.

13 DR. O'LEARY: Dennis O'Leary, President  
14 Emeritus of the Joint Commission.

15 DR. TAYLOR: Dr. Peach Taylor, Deputy  
16 Assistant Secretary of Defense.

17 GEN (Ret.) MYERS: Dick Myers, Vice Chair  
18 of the Defense Health Board, retired military, Air  
19 Force.

20 COL HACHEY: Wayne Hachey, Executive  
21 Secretary, Defense Health Board.

22 DR. DICKEY: And if we could get the

1 staff to identify themselves. Yes, ma'am.

2 MS. KLEVENOW: Jen Klevenow, DHB support  
3 staff.

4 MS. COATES: Marianne Coates, contracted  
5 consultant in communications for the Defense  
6 Health Board.

7 MS. JOVANOVIC: Good morning. I'm  
8 Olivera Jovanovic, DHB support staff.

9 MS. MARTIN: I'm Liz Martin, DHB support  
10 staff as well.

11 MS. PEABODY: Good morning. Hillary  
12 Peabody, also contracted DHB support staff.

13 MS. GAVIOLA: Hi. I'm Camille Gaviola,  
14 Deputy Director, DHB.

15 DR. DICKEY: And in the interest of  
16 time, I know all of you have signed in. And if  
17 there should be a time for you to speak today, if  
18 our public members would please identify  
19 yourselves before you speak, but I think we will  
20 forgo passing the mic around for this morning.

21 Our first speaker this morning is  
22 Captain Paul Hammer. Captain Hammer is the

1 Director of the Defense Centers of Excellence for  
2 Psychological Health and Traumatic Brain Injury.  
3 Prior to this position he served as Director of  
4 the Naval Center for Combat and Operational Stress  
5 Control at the Naval Medical Center in San Diego,  
6 California. Captain Hammer has trained thousands  
7 of Service members in operational stress control,  
8 psychological health, and traumatic brain injury.  
9 He is going to present an informational update  
10 regarding the DCoE's activities. Board members  
11 can find his presentation under tab 5 of the  
12 meeting binders. Captain Hammer, we're looking  
13 forward to your briefing.

14 CAPTAIN HAMMER: Just as soon as I  
15 untangle the mic.

16 DR. DICKEY: We're trying to maximize  
17 your stress to make sure that you've taken all  
18 your own courses.

19 CAPTAIN HAMMER: Test, test. Can you  
20 hear me okay? Good morning, everybody. My name  
21 is Paul Hammer.

22 I'm the Director of DCoE. When I

1       briefed the board here back in, I believe it was  
2       February or March. I was only here onboard for  
3       less than a month and was just getting underway.  
4       And at that time I promised you I would come back  
5       with a more detailed update, as well as being able  
6       to answer any and all questions hopefully that you  
7       had.

8                   What I wanted to do was talk about --  
9       and this is the outline of what I'm going to talk  
10      about -- is to provide an update on the activities  
11      and way ahead for DCoE, particularly in today's  
12      climate. I want to talk about our value  
13      proposition, what our competencies and  
14      capabilities are, what we've done in terms of  
15      strategic planning. I'm going to talk about what  
16      we do and what our role is in the realm of  
17      psychological health and traumatic brain injury  
18      care. I'm going to talk about some of our current  
19      initiatives and emerging areas of interest and  
20      what we're dealing with. I'm also going to talk  
21      about the recent trip we took to Afghanistan,  
22      along with the Gray Team 4. And then a little bit

1 about our future governance and what the way ahead  
2 is with that.

3 First, the value proposition. One of  
4 the criticisms of DCoE in the last, well, prior to  
5 when I came onboard was difficulty understanding a  
6 strategic alignment as what is it you do and why  
7 do we have one and what are we supposed to be  
8 doing? So a lot of the work that was done with  
9 DCoE among my people initially before I even got  
10 there was to talk about a value proposition. Not  
11 so much a mission statement as what is it we do?  
12 Who are we? And this is it here. We are the  
13 principle integrator and authority on  
14 psychological health and traumatic brain injury  
15 knowledge and standards for DoD. We're uniquely  
16 positioned to accelerate improvements in PH and  
17 TBI outcomes in policy that impact the continuum  
18 of care and further reduce variability across the  
19 Services.

20 Now, I realize that this is not a  
21 completely true statement and that in some ways  
22 it's more inspirational than anything else. But I

1 think this is something that we shoot for in terms  
2 of what we do. One of the problems that we had  
3 when we were first created and organized was we  
4 became all things to all people regarding  
5 psychological health and traumatic brain injury,  
6 and everything got dumped on us. And yeah, we'll  
7 do that. Sure, we'll do that. And we'll do that,  
8 too. And you ended up with a situation of DCoE  
9 running off in all directions. I think this  
10 focuses on what we do and this is principally --  
11 that principal integrator thing is what we really  
12 want to focus on.

13           It's important also to understand this  
14 continuum of care process in that what are we  
15 doing to improve the system of care in each of  
16 these realms. And what I like to say is that our  
17 sweet spot, you know, the middle of the bat there,  
18 right near the trademark is right in this area in  
19 terms of diagnosis and treatment. There are a lot  
20 of things that we can do with surveillance and  
21 prevention and screening and rehabilitation and  
22 reintegration. Those mostly belong to other

1 people. But what we are doing is looking at  
2 really how well do we diagnose and treat for  
3 psychological health and traumatic brain injury.

4           So what do we do? Well, our unique  
5 competencies and capabilities are these and this  
6 is what we do that brings value-added to the whole  
7 system. We bring objectivity and credibility in  
8 the evaluation, analysis, and standardization of  
9 care. We look at the system and we're dealing  
10 with systems issues so that we bring good  
11 information to pathways of care, clinical tools,  
12 and programs. We prioritize and identify needs in  
13 PH and TBI research. I look at us as the bookends  
14 of research. On one end we prioritize needs, look  
15 at what's needed, feed that into the research  
16 system, and on the other end take what comes out  
17 and translate it into clinical care. And  
18 translate it into good, effective practices.

19           We are a comprehensive resource for  
20 current and emerging information and clinical  
21 educational research information regarding  
22 psychological health and traumatic brain injury.

1 I liken this as to for all audiences we provide  
2 information on this stuff, all different  
3 audiences, whether it's clinicians, whether it's  
4 politicians or policymakers, whether it's the  
5 run-of-the-mill public, from anywhere from the  
6 eighth to ninth grade level all the way up to the  
7 graduate level. My analogy is that you don't tell  
8 a medical student we're going to study cardiac  
9 physiology next week so go into the library, look  
10 up all the papers that are relevant regarding  
11 cardiac physiology, sift through what's important,  
12 what's not important, and then we'll discuss them  
13 next week. You have somebody who does that. You  
14 have an expert. You have a cardiologist that's  
15 been around in the field that looks all that stuff  
16 up and figures all that stuff out and then he  
17 writes a chapter in a textbook. And you can do  
18 the same thing, whether it's a newspaper article  
19 or the Reader's Digest article, all the way to a  
20 monograph or something that a really intelligent  
21 graduate level person needs to do. We're  
22 providing information and digesting information,

1 and putting it together in a way that people can  
2 use is important.

3           And then we're the nucleus of DoD's  
4 multidisciplinary, interdisciplinary collaborative  
5 network regarding a lot of this stuff. We allow  
6 subject matter expertise in unique perspectives  
7 across stakeholders to be vetted and understood in  
8 a lot of different ways. And to that end this is  
9 how I view us, and I will tell you this was given  
10 to me by General Robb and I shamelessly sort of  
11 modified it from what the Institute of Surgical  
12 Research has done down in San Antonio. They -- I  
13 aspire to be what they are for trauma surgery.  
14 That's what we aspire to be for psychological  
15 health, for PTSD, and traumatic brain injury.

16           What they've done is they are the center  
17 that has a lot of reach to a lot of different  
18 areas, whether it's government agencies, whether  
19 it's to the Joint Staff, whether it's to the VA,  
20 to academic, to national meetings, to partner  
21 centers, to other agencies and other institutions.  
22 They were the center that was able to collect data

1 through the Joint Theater Trauma System from all  
2 the way from initial care to long-term rehab care  
3 and everything in between, collecting data,  
4 identifying, evaluating, and analyzing it and then  
5 putting out over 34 clinical practice guidelines  
6 related to trauma care. I want to do the same  
7 thing for PTSD and traumatic brain injury. And  
8 we're getting there.

9 I'm going to show you some examples of  
10 some of the good work that we've done along that  
11 line. But you also have to remember that the  
12 Institute of Surgical Research and the Joint  
13 Theater -- well, the Joint Theater Trauma System  
14 wasn't, but ISR was a mature organization when the  
15 war began, whereas we got started in 2007, you  
16 know, starting to stand up but actually stood up  
17 in 2008.

18 What we want to do is create a Joint  
19 Theater Neurotrauma System. And this also will be  
20 something that long after the war is gone will be  
21 able to provide information to us but do the same  
22 kind of thing. No matter what level we're at,

1 we're collecting data, we're looking at the  
2 system, bringing it in, vetting it with other  
3 centers, looking at it and digesting it, turning  
4 it into knowledge. And not just raw information.  
5 Not just the kind of thing you see in the  
6 newspaper all the time where some study comes out  
7 and off we go taking chromium for whatever, you  
8 know, ails us. You know, look at it  
9 intelligently, digest it, and really turning it  
10 into knowledge. And then approaching the care by  
11 providing clinical practice guidelines, clinical  
12 support tools, monographs on various things.  
13 That's the kind of stuff that I think we do.

14           And I will tell you that DCoE has  
15 actually done a lot. I always hate when people do  
16 a slide and say I know this is hard to read but --  
17 and here I am doing it. But I'm going to show you  
18 some detail later. This is just a small sampling.  
19 This is not every project or every initiative we  
20 have onboard. But what I asked my staff to do one  
21 day is say, look, I want to map everything we're  
22 doing to one of these things and see if it fits,

1 see what it fits, and look at where are we, you  
2 know. We've done a lot of prevention initiatives  
3 and you also can't say, well, you know, you've got  
4 less here and more over here. The numbers of  
5 initiatives are not weighted by how important they  
6 are so I wouldn't look at that. But it is  
7 important to understand that we have a lot of  
8 things going on. And I will tell you the orange  
9 is an existing project. The purple is RAND studies  
10 or various studies and the blacks are other kinds  
11 of things.

12 One of the major things we're doing is  
13 the integrated mental health strategy between DoD  
14 and VA. DCoE has 60 percent of the  
15 responsibilities, 60 percent of the initiatives  
16 for that. And, of course, there are other things  
17 that do not fit along that continuum of care.  
18 There are a lot of things that have impacts across  
19 the continuum and there are a lot of initiatives  
20 there.

21 Rather than blow you away with lots and  
22 lots and lots of things, I want to talk about just

1 a few things and give you some sample activities  
2 across the continuum of care. One is I talked  
3 about the Joint Theater Neurotrauma System that  
4 we're trying to set up and start growing. But one  
5 of the major things we've been able to do is do  
6 TBI tracking, installing the BECIR, the Blast  
7 Event Concussion Incident Reporting System. If  
8 you have the Sydney, which is the system by which  
9 the line guys report significant events, the BECIR  
10 is a module within Sydney. That if you've been  
11 involved in a blast you have to put data into that  
12 BECIR. And DCoE is on the other end of that data.  
13 It goes through JTAPIC and a lot of other  
14 places but we are on the other end in terms of  
15 analyzing that blast data and looking and  
16 collecting blast data to understand that.

17 We have been significantly involved in  
18 DODSER. Our component center, T2, the National  
19 Center for Telehealth and Technology has, and  
20 owns, and runs the DODSER, the DOD Suicide Event  
21 Reporting System. And what they do is they  
22 collaborate or they collate all of the DOD suicide

1 event reports that are standardized throughout all  
2 four services that come into us. We are involved  
3 in the joint publication on Total Force Fitness  
4 and looking at how do we have resilience across  
5 the force. In fact, I brought my iPhone, and if  
6 you guys want to see the Mood Tracker app, or the  
7 PTSD Coach, or any of the T2 apps, I'm happy to  
8 show them to you. We have in-theater protocols  
9 for both PTSD and depression. We're doing in-  
10 theater CPGs and a DODI on the management of  
11 concussion in the deployed setting. And I will  
12 tell you, I'm going to talk a little bit about  
13 that later. That's actually happening on the  
14 ground in Afghanistan, that you're actually  
15 getting good, consistent care for mild TBI and  
16 concussion. It's not perfect, it's still got a  
17 long way to go, but it's light years ahead of  
18 where we were just a couple of years ago.

19 One of the things that you'll see in  
20 your goody bag I put in is a Co-Occurring  
21 Conditions Toolkit. I'm sorry, I didn't bring  
22 goodie bags for the general public; it's only for

1 the Board members, but I will show you those later  
2 on. And we have a number of web-based TBI case  
3 studies that we've had online to improve education  
4 for traumatic brain injury. We have a number of  
5 reintegration initiatives. inTransition is a  
6 program to provide coaching for people going from  
7 treatment situations, either from one MTF to  
8 another if they're PCSing in their move, or if  
9 they're transitioning out of the military into the  
10 VA.

11 The Real Warriors campaign is the only  
12 DoD anti- stigma campaign really ongoing. The  
13 only one. DoD really does not have any  
14 anti-stigma campaigns, really, other than Real  
15 Warriors. And afterdeployment.org is another  
16 website with tons and tons of useful information  
17 for Service members and their families regarding  
18 deployment and how to cope with what comes  
19 afterwards. And then lots of different  
20 initiatives. One of the major things we did  
21 recently was doing some consulting with Admiral  
22 Kiser and the Medical Education Training Campus

1 for the -- down in San Antonio where they train  
2 all the corpsmen and medics for all four  
3 Services -- in looking at revamping their  
4 psychological health curriculum to really make it  
5 more relevant currently.

6           So we've got a lot going on. And the  
7 one thing I also want to talk about is the annual  
8 conferences. A lot of people look at that as sort  
9 of boondoggles and, yeah, we're going to travel to  
10 nice places and do that. But I think annual  
11 conferences are critical to what we do because  
12 when you have a conference and you bring people  
13 together you get them focused on exactly what you  
14 want them to think about. They come together,  
15 they're away from work, they're not, you know, you  
16 get another barrage of e-mail, you get another  
17 document they have to read. They get away.  
18 They're able to look at that, and you can also  
19 shape what you want to do and the message that you  
20 want to put out regarding particular issues around  
21 that conference.

22           Now, I know the ATACCC and again, I'm

1 shamelessly and openly imitating what the  
2 Institute of Surgical Research does. But they do  
3 that with ATACCC, their annual trauma conference.  
4 They do that every year. They bring out stuff,  
5 put it out, and that's the conference where it  
6 happens. And with our conferences -- we have  
7 three of them actually -- the Warrior Resilience  
8 Conference, the Trauma Spectrum Conference, and  
9 the Suicide Prevention Conference, which is a  
10 joint conference with DoD, are all critical in  
11 each of those various realms. And, in addition,  
12 the Defense and Veterans Brain Injury Center  
13 (DVBIC) does an annual TBI conference where they  
14 do real, concrete TBI education. Those are the  
15 kinds of things that I think are value-added in  
16 terms of what we do in really getting the  
17 information out in a constructive way.

18 I also want to talk about the integrated  
19 mental health strategy with the VA. This is an  
20 initiative from the Joint Executive Council  
21 between DoD and VA with the HEC (Health Executive  
22 Council) regarding how do we coordinate better in

1 terms of doing mental healthcare between the VA  
2 and DoD. There are 27 initiatives. Of those,  
3 DCoE has the lead on 19 of them, 60 percent. So  
4 we get the lion's share of what we have to do.  
5 Things like, you know, these are all the things --  
6 the blue ones are the ones where we have  
7 significant actions. So quality measures, impact  
8 of caregivers, patient outcomes, the in-transition  
9 program, telemental health. Another major thing  
10 we're looking at with telemental health is how to  
11 resolve federal rules regarding health care.  
12 That's a key thing that, you know, people say,  
13 well, the telemental health, put it up here and  
14 we'll just do it. Right? Yeah, great. No. If  
15 you've got a physician in one state and a patient  
16 in another state you've got rules regarding  
17 medical practice that need to be overcome. You  
18 need -- and if they're not in a federal facility  
19 you've got a problem. You've got a major problem  
20 in terms of risk management, in terms of  
21 malpractice, in terms of licensure to practice.  
22 There are a lot of things that need to be dealt

1 with with that. So those are the kinds of things  
2 that we look at.

3           And then in terms of strategic action,  
4 suicide risk prevention, family resilience, the  
5 mental health justice outreach, the chaplain's  
6 role, lots of different things involved and how do  
7 we integrate better in terms of doing mental  
8 health between the VA and DoD.

9           I want to spend a little bit of time  
10 talking about the Gray Team. And the Gray Team is  
11 important because it was Chairman Mullins'  
12 initiative to rapidly improve things that he  
13 wanted to focus on and cares about. The most  
14 significant thing that he did was regarding TBI.  
15 And that involved a lot of things and I think it  
16 ultimately helped get the directive-type  
17 memorandum involved or engaged in theater. But  
18 what the idea was with the Gray Team, and I think  
19 the Gray Team was named after gray matter like the  
20 brain, you know. I don't think the color was any  
21 big thing other than that. But it's a hand  
22 selected group of folks who have significant

1 expertise in what we're dealing with that  
2 represent the Service Chiefs, the Combatant  
3 Commands, and the Chairman of the Joint Chiefs.  
4 And the idea is -- and the leader of our team was  
5 Colonel Chris Macedonia. What his idea was is to  
6 use John Boyd's OODA Loop methodology. The idea  
7 that when you're in the middle of chaos, how do  
8 you make a decision about what to do next?

9           And there's a lot of people that will,  
10 you know, have lots of research studies and, you  
11 know, spend time doing things but when you're in  
12 the middle of a dogfight you can't do that. So  
13 observe, orient, decide, act. You observe what's  
14 going on, orient yourself to what's happening,  
15 make a decision, and act on it. So it isn't the  
16 idea that it's going to be the perfect solution to  
17 everything but it gets the ball rolling and gets  
18 us moving down the road. And what it was able to  
19 do was at least get some clarity on the concussion  
20 problem and get it started. So the first three  
21 Gray Teams dealt mostly with concussion.

22           Gray Team 4 was focused mostly on PTSD

1 and traumatic stress injuries. So the idea was  
2 it's driven by the line leadership's desire to  
3 act. Let's get moving. We haven't got time to be  
4 all scientific and sit back and, you know, take  
5 forever to make a decision. People are dying.  
6 People are suffering. People are hurting. Let's  
7 get on with it. Yet we also maintain the medical  
8 tradition of we need to act scientifically, we  
9 need to act deliberatively, we need to focus and  
10 really understand the problem that we're dealing  
11 with and not just have kneejerk reactions. So  
12 it's a pretty unique mechanism for really looking  
13 at things quickly and then making some decisions  
14 and at least moving forward on it.

15 So our charter from the Joint Chairmen  
16 and CENTCOM -- Joint Chiefs and CENTCOM was,  
17 number one, let's look at mental health prevention  
18 and treatment. What are we doing downrange? What  
19 are we really looking at in terms of stigma? We  
20 also wanted to look at sleep hygiene because that  
21 was critical. We were hearing -- and everybody's  
22 heard a lot about that. We wanted to talk about

1 standards of practice in both TBI and behavioral  
2 health. We need to end the lottery of luck and  
3 location. That the therapy you get happens to be  
4 because you walked in and you happened to connect  
5 with the right therapist at the right time that  
6 has your needs in mind and you just seem to do  
7 okay. And the problem that we have in the system  
8 is that we have a lot of people flailing around  
9 with not getting the right care at the right time  
10 or hooking up with the right person in the right  
11 way and they end up with the lottery of luck and  
12 location. They flail around until they finally  
13 get there and we can't have that.

14 I want to talk about the role of  
15 leadership. And there were some reports and some  
16 issues regarding toxic leadership and its  
17 contribution to what happens with behavioral  
18 health problems. I want to look at the  
19 feasibility and desirability of putting out a  
20 similar behavioral health directive-type  
21 memorandum like we did for TBI. Would that be a  
22 good thing to do? And if so, what would it

1 consist of? And we also wanted to look at how  
2 well is the current directive- type memorandum for  
3 TBI working? Is it happening? Is it really  
4 going? We also want to look at blast dosimeter  
5 fielding. DARPA had developed these blast  
  
6 dosimeters they wanted to look at and see if they  
7 want to field it, and previous Gray Teams had  
8 worked on getting MRIs out there and we looked at  
9 all the three major Role 3 sites regarding, you  
10 know, where they were with MRIs.

11           So I'm going to talk just a little bit  
12 to some of the findings. This is not the  
13 exhausted list but what we found was, gee,  
14 surprise, there's lots of variation in care. Lots  
15 of variation in care. And a lot of it is --  
16 depends upon who you are and where you're at and  
17 what you think. We need to improve sleep hygiene.  
18 That was a significant problem. And that is a  
19 relatively easy fix and also something that the  
20 line can do. We noted that in the current  
21 tactical situation you have hundreds, literally  
22 hundreds of combat outposts and forward operating

1 bases where they are hungry for getting behavioral  
2 health providers out there. And when they do come  
3 out there you have lines that go, you know, around  
4 the buildings waiting to be seen. So what we  
5 thought was how can we extend or better utilize  
6 behavioral health extenders? How do we take psych  
7 decks and better utilize them? We found that  
8 complementary and alternative medicine was widely  
9 accepted and actually in some places really well  
10 utilized. There were a couple of units where they  
11 really found that pre-deployment screening, a good  
12 effort regarding pre-deployment screening really  
13 played off later on when the stress got high and  
14 they knew, gee, we're glad we did that  
15 pre-deployment screening so that we don't have as  
16 many problems. They're not seeing as many  
17 problems.

18 Like I said before, the TBI DTM is  
19 working. There are concussion centers, concussion  
20 care centers all over the place there. They're  
21 really working well. They have a good protocol  
22 down. It's happening and it's happening well. So

1       that, you know, the problem isn't solved yet but  
2       the fear that a lot of line leaders had -- oh, my  
3       God, if I send people to get screened I'm going to  
4       lose them. They're going to be MEDEVAC'ed away was  
5       not realized. They're getting 97, 98 percent --  
6       well over 90 percent return-to-duty rates. Now,  
7       at the same time though the medical folks are  
8       being able to keep them for 10, 12, 13, 2 weeks,  
9       you know, somewhere in that timeframe. So what  
10      you've got is people getting adequate rest for an  
11      adequate period of time before being returned to  
12      duty.

13                   And then we also found that there were  
14      some concerns about leadership. That we need to  
15      find a way to improve leadership so that it does  
16      not exacerbate -- that stressed out leaders do not  
17      exacerbate stressed out individuals. So some of  
18      the recommendations we had -- and this is, again,  
19      there are roughly 14 or 15 recommendations and I  
20      selected some of the key ones. One key one that  
21      they talked about, some of the people indicated  
22      was embedded TBI care for high risk units. For

1 groups like route clearing and EOD units that are  
2 getting blown up all the time, they could really  
3 use somebody with real extensive knowledge  
4 regarding traumatic brain injury. They could use  
5 an embedded provider in that unit to provide care.

6 Embedded behavioral health providers  
7 were well accepted. And in fact, that's the way  
8 to go. Having behavioral health providers in the  
9 highly populated, forward operating bases or the  
10 main bases was not where you needed them. You  
11 need them out with the FOBs and the COPs. You  
12 need to get people out there because that's where  
13 they were stressed and that's where they were  
14 really willing to see people. So getting them out  
15 there and getting them seen was important. And  
16 the effect from the embedded behavioral health  
17 providers, the ones that are actually organic to  
18 those units, was profound. Like I said, they  
19 would go out and have lines around the building  
20 and they'd be-- they were cheap. They were just  
21 a guy -- they'd find a shed for them to hang out  
22 in and we talked to one guy who had just people in

1 the dark out there waiting for him, you know,  
2 lined up around the building.

3 One of the things that we found and one  
4 of our team members was involved in is the Navy  
5 Mobile Care Teams. And the Navy Mobile Care Teams  
6 were developed in order to address the mental  
7 health needs for Navy individual augmentees. Now,  
8 for those of you that are unfamiliar, largely the  
9 way most of the Navy folks that are deployed go to  
10 deployments, they're either with the Marines  
11 embedded in Marine units or part of small medical  
12 units with the medical battalions. Or they are  
13 individual augmentees that are helping out other  
14 Services, mostly the Army by filling in billets  
15 there.

16 So what they did was they had these  
17 Mobile Care Teams that went out and their goal was  
18 100 percent contact with the Navy IAs sometime  
19 during their deployment. And what they would do  
20 is they took a survey with them, which is a  
21 relatively simple survey and they were able to get  
22 some good ideas about how well are people doing.

1       In some cases they had actually large, organic  
2       units. For example, doing detainee ops, you know,  
3       that sort of thing. You had some master at arms  
4       units that were doing that. But what they were  
5       able to do is look at this and have pretty good  
6       factual information, not just hey, how are you  
7       doing? And the guy says I'm fine, you know, and  
8       it's actual survey information with some  
9       statistics and some discipline to it.

10                So what we thought was maybe we need to  
11       look at how do we do this on a wider basis? How  
12       do we do this in a more complete basis for the  
13       entire force? We found also that people were  
14       using the ANAM for return-to-duty. And that's  
15       actually a good thing. That they were actually  
16       looking at the pre-deployment ANAM. They were  
17       able to reach back, get the record, get the  
18       pre-deployment ANAM from the record, and then  
19       compare it to the current ANAM and use that as one  
20       data point for return-to-duty decision-making. We  
21       also found a lot of other creative return-to-duty  
22       decision-making they were doing as well.

1           I was really impressed with what some of  
2           the occupational therapists in the concussion care  
3           centers were able to do. One of them, for  
4           example, I thought it was just brilliant. So what  
5           it was is a piece of paper with a tactical  
6           situation written on it that you would hand to the  
7           soldier and say give me a status report, you know,  
8           enemy situation kind of report. The individual  
9           would have to read the piece of paper, read the  
10          paragraph, create a status report and do it in a  
11          coherent way. So what did that test? Reading  
12          comprehension. Can he read it without getting a  
13          headache? Can he spit back the information in an  
14          accurate way? All those things are completely  
15          relevant to what that guy does as a soldier. It  
16          has nothing to do with, you know, test batteries  
17          or any of that stuff. Its relevant information is  
18          can this guy function as a soldier like he  
19          normally would?

20                 We found a lot of supplement use. You  
21                 know, Rip It was the drink of choice in many cases  
22                 and that contributed to the sleep thing. One unit

1 did unit resilience training. And this was really  
2 brilliant. What they would do is take a unit off  
3 line -- out of the fight, bring it back to the main  
4 base, and they would have like three or four days  
5 where they would have a lot of downtime, a couple  
6 of classes. They'd bring the behavioral health  
7 provider and the chaplain and a couple of other  
8 people in, do a little talk about resilience,  
9 about taking care of yourself, making sure they  
10 got good sleep. And then the day before they  
11 would go back they would go back out, get out on  
12 the range, fire weapons, feel good again. They'd  
13 have a little organized volleyball, that kind of  
14 stuff, some good unit cohesion and then send them  
15 back out. A little miniature R&R, if you will, a  
16 miniature resilience training.

17 We thought that was such a good idea and  
18 it seemed to be so well accepted and so positively  
19 seen that we thought, you know what? They need to  
20 evaluate that more. One of the other things we  
21 thought is maybe combine that with something  
22 called integrated war fighter management. Look at

1       it as you have your star player that you spent  
2       \$70 million on in free agency and it's the middle  
3       of August and he's getting shellacked in a  
4       particular game. You don't just leave the guy in  
5       there; you take him out. You pull him out. Now,  
6       who makes that decision? Well, the manager and  
7       maybe the pitching coach, maybe one of the other  
8       coaches. You all huddle together. What's going  
9       on? What's the data? How's the guy doing? And  
10      then you make a decision whether to pull him or  
11      not. But what you don't do is leave the guy in  
12      there to flounder around because, well, the relief  
13      pitchers aren't too good or, you know, whatever.

14                 Well, we need to look at our soldiers,  
15      marines, sailors, and airmen in the same way; that  
16      we need to manage their stress well. But what  
17      line leaders are often looking for is tools to do  
18      that. How do I make that decision? What criteria  
19      do I use? What, you know, other than my gut level  
20      feeling? And so that's the kind of thing that  
21      we've got to do, is provide like we do with a  
22      Mobile Care Team, surveys of units. And then we

1       also looked at -- and by using those survey  
2       instruments which can be relatively simple and  
3       plugged into a relatively simple sort of report,  
4       you give the individual leader an idea of his  
5       subordinate unit.  What are they doing?  How are  
6       they responding?  And you enable him -- you give  
7       him -- I guess the pitch count is probably the  
8       good analogy -- of where are they at?  How tired  
9       are they?  What's going on?  And how do we pull  
10      them out?

11                 The other thing is psychological first  
12      aid.  That needs to be taught better.  All the  
13      services are teaching similar concepts.  This is a  
14      validated, evidence-based concept that the VA's  
15      National Centers for PTSD has put out regarding  
16      what do we do when people are acutely traumatized?  
17      The problem is the Army sort of teaches it sort of  
18      haphazardly.  The Navy has an acronym of seven Cs  
19      that nobody can remember.  And it's not really  
20      well taught.  So we need to revamp that in some  
21      way and teach it better to make it, you know, a  
22      little simpler, a little more comprehensible.

1           So that was the Gray team. Some of the  
2 results we had, some of the recommendations, and  
3 some of the way forward and work to look at. And  
4 I wanted to finish up with talking about our  
5 governance. When we were first created the  
6 legislation stated that we would be placed under  
7 an executive agent. It didn't say who or how, but  
8 over the course of the last two years or so the  
9 biggest concept has been placing DCoE under the  
10 Army with the Medical Research and Materiel  
11 Command. That seemed to be a good fit. And it  
12 seemed to be a good way to go. So I wanted to  
13 talk about our DCoE governance update on where we  
14 are at with that process and the way ahead and  
15 what we're doing with it.

16           So in April 2011, the Undersecretary of  
17 Defense for Personnel and Readiness signed off on  
18 a report regarding DCoE governance that basically  
19 said they're going to establish a CoE advisory  
20 board and then transfer support responsibility  
21 from TRICARE Management Activity over to MRMCM.  
22 So the idea is that DCoE will still carry out its

1 mission and still have relationships with Health  
2 Affairs and TMA but will require support and get  
3 support and guidance and a lot of care and feeding  
4 from MRMC. So we are working on this and we are  
5 -- our target date at this point is October 2012,  
6 next year. Now, I know some people go, well, why  
7 hasn't it happened already? You can't move people  
8 and money and a lot of things without a lot of  
9 authority, so there's a lot of paperwork and stuff  
10 to do.

11 So one of the things that I wanted to  
12 show you is our proposed future governance and  
13 what we're looking at in trying to understand this  
14 and sort of work out some of the details. So  
15 currently, this is our chain of command more or  
16 less. It actually shouldn't be HA, it should be  
17 TMA. But the Assistant Secretary of Defense for  
18 Health Affairs, Dr. Woodson, wearing his TMA hat.  
19 And then, you know, we have the SMMAC, the Senior  
20 Military Medical Advisory Coommittee. And now we have this  
21 CoE oversight board that we report to and it's  
22 more or less our board of directors.

1                   What we would now do is report to the  
2 Department of the Army through the commanding  
3 general of MEDCOM, the Surgeon General, down through  
4 MRMC and then we would be under them. We would  
5 still have the dotted line over to the Health  
6 Affairs' TMA side, and we would also have sort of a  
7 dotted line to the coordination with the Army's  
8 Executive Agent Coordination Office and the Office  
9 of the Surgeon General.

10                   So this is kind of generally what we're  
11 working on. We are looking at what functions do  
12 we have? What efficiencies can we gain? What  
13 administrative support do we need? How do we deal  
14 with contracts? How do we deal with money? How  
15 do we deal with people? What kind of functions  
16 are we dealing with? And so there are a lot of  
17 details to sort of hash out.

18                   One of the things that we're looking at  
19 is how do we make ourselves a little bit leaner in  
20 order to get there? And also, what do we do with  
21 our component centers because they're still out in  
22 the wind as well? What we're looking at is right

1       now we have three component centers -- DVBIC  
2       (Defense and Veterans Brain Injury Center), the  
3       Deployment Health Clinical Center, and the  
4       National Center for Telehealth and Technology.  
5       And what we're considering is trying to figure out  
6       ways to make the headquarters element more like a  
7       headquarters element and have execution functions  
8       with a TBI focus with DVBIC, a psychological  
9       health focus with DHCC, and then looking at  
10      technology, innovations for PH and TBI with T2.

11                 So still working out a lot of those  
12      details. There's a lot of issues related that  
13      we're trying to figure out. There are a lot of  
14      different models. We had six or seven different  
15      models. We did a recent offsite in Frederick,  
16      Maryland, with the folks at MRMC, where we looked  
17      at different models, we looked at different places  
18      where it could go and what the pitfalls and risks  
19      and advantages were of doing any of these. So  
20      that's basically where we're at. We're still  
21      working on it. It's a work in progress and I'm  
22      happy to answer any questions on that particular

1 aspect of it.

2           And what I wanted to do now is if you've  
3 got your little goodie bag -- okay. I hope I  
4 brought mine with me. I wanted to demonstrate at  
5 least show you some of the products that we have  
6 in sort of a concrete way. And I'll sort of have  
7 to demonstrate for the folks over here. Probably  
8 the thing that I'm really proud of is this one,  
9 which is a Co-Occurring Conditions Toolkit. And  
10 when you look at it in terms of what's our  
11 mission, in terms of providing clinical guidance  
12 and improving care and the diagnosis and treatment  
13 of traumatic brain injury and PTSD, this is  
14 probably one of the centerpieces. It's got little  
15 tabs where you can go and look up things. You've  
16 got -- in most cases there's a table there. I  
17 liken it to being back in medical school looking  
18 at the Sanford Guide, you know, that kind of  
19 thing. Okay. What antibiotic do I use for this  
20 bug? Okay. What do I do for sleep for this guy?  
21 How do I deal with this kind of symptom? And this  
22 is the kind of thing that we can put out.

1           And by the way, we're working on an app  
2       for this thing as well. We have the T2 apps. If  
3       you want to see, I brought my iPhone. I'm happy  
4       at the break to show you the T2 apps. You can  
5       download them for yourself. They're free from the  
6       Apple iTunes store -- the Tactical Breather, the  
7       Mood Tracker, the PTSD Coach. So they're all  
8       excellent apps.

9           If you look in the folder there --  
10      there's a couple of different folders in addition  
11      to the black thingy that goes in the bottom of the  
12      bag. If you look at this multicolored folder  
13      here, this one has a lot of guides regarding  
14      depression, regarding PTSD. There's cognitive  
15      rehabilitation for mild traumatic brain injury, a  
16      lot of good information to put out. This one has  
17      information on the Real Warriors campaign. This  
18      is a toolkit that comes with Real Warriors. You  
19      can download a lot of these things but the major  
20      point of Real Warriors is the website, which  
21      basically says, you know, you don't -- if you ask  
22      for help, that's a sign for strength, too. Each

1 of you gets a free squeezey brain.

2 We have a couple of things on case  
3 management of concussion and mild TBI. So there's  
4 a lot of stuff in here. And what's the other  
5 booklet? So the Mild TBI Pocket Guide. And  
6 again, this is an app. This is about to become an  
7 app pretty soon. So you can carry it on your  
8 iPhone. And I was encouraged by somebody who I  
9 talked to -- I forget who it was -- recently, but  
10 they had said -- gave a talk and they said, yeah,  
11 I was just out at the VA in Phoenix and I saw  
12 these things all over the place. And if you go to  
13 Bethesda, if you go to the new Walter Reed, if you  
14 go all over the place, we put probably 10,000 of  
15 these co-occurring condition toolkits out. We're  
16 into our second printing and we're actually  
17 revising it so that -- tweaking some of the  
18 recommendations.

19 We have a seat on the Clinical Practice  
20 Guidelines Workgroup. They're a combination of  
21 VA-DoD Clinical Practice Workgroups. We're a part  
22 of that. And it's actually an interesting

1 partnership because they like putting out the  
2 Clinical Practice Guidelines but they're unsure  
3 about what's the next step. How do we get people  
4 to use them? How do we actually get them  
5 incorporated? And when you look at the normal  
6 cycle of medical innovation and new treatments and  
7 new improvements to therapy, how long does that  
8 take? Four, five, seven years sometimes? It gets  
9 to a national meeting. Some people pick it up.  
10 Others aren't so sure. It's got to get out there.  
11 There's a medication. What happens? You've got  
12 drug companies on your doorstep with the latest  
13 coffee cup and, you know, all the other crap that  
14 they bring you. But our goal is to get that stuff  
15 out there and accelerate the improvements quickly  
16 so that when we have a new innovation with TBI,  
17 when we have something with PTSD that we can  
18 really get rolling, that we get it out there.

19           So there's a lot of stuff that we've got  
20 to do and we've got a wide, you know, my front --  
21 my warfare front, if you put it that way, is you  
22 know, a mile wide and sometimes an inch deep. You

1 know, we have a lot of stuff that we're working  
2 on. So that's where we're at. That's where DCoE  
3 is right now. We have lots and lots of stuff  
4 we're working on, and I feel much more competent  
5 coming to speak to you today and answering  
6 questions now than I did 10 months ago. So I will  
7 leave it at that.

8 Are there any questions? I've got about  
9 10 minutes.

10 DR. DICKEY: Dr. Jenkins?

11 DR. JENKINS: Paul, that was a fantastic  
12 presentation and a great job in such a short  
13 amount of time that you've been at the helm there.

14 A question for you is, you know, I run  
15 into a lot of young men and women in southeast  
16 Minnesota who don't have access to a VA Hospital.  
17 They're getting care in family practice shops, et  
18 cetera. Is there any effort at all -- it's a huge  
19 undertaking I understand -- but to get this out to  
20 the general public through perhaps lettered  
21 organizations -- the AMA, et cetera -- because  
22 there's a lot of this that just has to get out to

1 the civilian community?

2 CAPTAIN HAMMER: Yeah, I concur.

3 There's a great need out there, particularly with  
4 the National Guard and Reserve population. And  
5 they are the most difficult nut to crack in this  
6 particular thing.

7 Number one, all of our stuff is freely  
8 available on our website, so it's out there in a  
9 public domain and anybody can get it. Number two,  
10 both inTransition and Real Warriors have -- and  
11 we have a significant outreach capability and  
12 outreach mechanism that really goes out to a lot  
13 of different partners to put this stuff out and  
14 make it known. There's also a lot of training  
15 available for free for providers, particularly  
16 civilian providers in terms of getting trained up,  
17 number one, in, you know, how do you relate well  
18 to the military population? You know, how do you  
19 speak military? As well as, you know, we have --  
20 there's still a lot of training available to  
21 improve the level of care. But as you say,  
22 there's still a long way to go that we have to do

1       that.  But, yeah, that's a significant effort in  
2       our outreach, is doing that.

3                     DR. DICKEY:  Dr. Higginbotham.

4                     DR. HIGGINBOTHAM:  I'm glad you ended  
5       with the challenges of translating evidence to  
6       actual practice because certainly when you look at  
7       all the clinical trials that have been done at the  
8       National Institutes of Health, it takes decades to  
9       really change practice.  So just piggybacking on  
10      my colleague's question, to what extent are  
11      patients empowered to actually help with a  
12      feedback loop back to you?  Because it seems like  
13      a lot of your materials are provider-oriented but  
14      sometimes if patients are empowered to ask the  
15      questions and then if they're not getting the care  
16      they need it could be an early, you know,  
17      indicator.  But certainly congratulations on your  
18      work.  I mean, this is a huge effort and you're on  
19      the right track.

20                    CAPTAIN HAMMER:  Thanks.  I think  
21      patient empowerment is critical.  And I think  
22      that's an important piece.  As part of our

1 outreach, we have a call center where people can  
2 call into us with comments or asking for resources  
3 to get help. I will confess that I am largely  
4 focused on the provider and I think that's our  
5 biggest need right now, is fixing the system.  
6 Because I'm not comfortable with how well we're  
7 doing in providing good care. And I think it's  
8 still kind of haphazard. It's still, you know, I  
9 use a joke that if you have a clinic with, you  
10 know, 20 mental health providers in it you have 20  
11 private practices that happen to be in the same  
12 location. You know, and that there isn't that  
13 synergy. We're not triaging well. We're not  
14 doing good case management. We're not doing a lot  
15 of the things that I think we've got to do. And I  
16 think if we can do that better I think patients  
17 will be more satisfied. But certainly, I think  
18 that's a good point, that I need to take into  
19 account, is how do we give, you know, good  
20 feedback from patients? Because, you know, it's  
21 like the old customer service thing. You know,  
22 the customer won't tell the company that they had

1 a bad experience; they'll just go off and tell all  
2 their friends. And I worry that that may be part  
3 of what's going on with us. That we need to  
4 really seriously look at that.

5 DR. DICKEY: Yes.

6 DR. BULLOCK: I think DCoE is emerging  
7 as this huge resource.

8 CAPTAIN HAMMER: You might want to use a  
9 mic so they can get -- it's recorded.

10 DR. BULLOCK: I think the size of the  
11 resource that you have is enormous. How about  
12 closing the loop for research? For example, how  
13 much feedback? Of the problems that you're  
14 uncovering, how much feedback is there back into,  
15 for example, CDMRP and the other (inaudible)  
16 research?

17 CAPTAIN HAMMER: Huge. In fact, on  
18 November 30th and December 1st, I will be a voting  
19 member in the review and analysis of the PH and  
20 TBI research portfolio. And, in fact, that I  
21 think is one of the major advantages to being  
22 aligned with the Medical Research and Materiel

1 Command because they don't own CDMRP. They own  
2 all the joint program committees that actually do  
3 the research. And in the last several months we  
4 have really been interacting a lot more.

5 I think they value that interaction with  
6 us where we are able to say, hey, what we really  
7 need is, you know, more research on X, Y, and Z.  
8 And then at the other end, being able to take what  
9 they are giving us. Here's the newest, latest,  
10 greatest thing that this group just came up with  
11 that we funded. Okay, how do we put that into  
12 practice? And I think that's the core thing for  
13 us, is being there to influence the system. In  
14 other words, there are other people. The Surgeons  
15 General of each respective military service own  
16 their medical system. But having somebody there  
17 to input and sort of translate for them I think is  
18 important. But we're very much involved in the  
19 research, both the front and back end. What we  
20 don't do is middle. We don't do the research.  
21 We're fitting into it and we're taking out from  
22 it.

1 DR. DICKEY: You mentioned a number of  
2 the apps, and some of you will recall we had a  
3 chance to see some of those when we were at  
4 Washington State. Several of them are actually  
5 for the soldier to use. So can I assume we're  
6 issuing every soldier with a smart phone now?

7 CAPTAIN HAMMER: Can I put my order in  
8 for an iPhone instead of an Android?

9 DR. DICKEY: I assume lots of them  
10 actually have the iPhones and so we're telling  
11 them ahead of time that those apps are there and  
12 they can buy them.

13 CAPTAIN HAMMER: They're free. They  
14 don't have to buy them. They're out there.

15 DR. DICKEY: You're right. So they can  
16 just download them.

17 CAPTAIN HAMMER: Just download them and  
18 use them. And we've got a lot of good feedback on  
19 the PTSD Coach. That can be something you can use  
20 alone or you can use that along with your  
21 therapist if you choose to. The Breathe2Relax I  
22 think is an excellent app. I use that sometimes,

1       you know, myself.

2                   DR. DICKEY:  Are we telling soldiers  
3       about this before they head over so that -- how do  
4       they even know that app is there to buy, that it  
5       may be a tool they want to use?

6                   CAPTAIN HAMMER:  We have a lot of  
7       mechanisms to get the word out but, you know,  
8       certainly we can do a better job of publicizing it  
9       more.  But putting the word out and getting the  
10      word to the average soldier is a challenge.

11                  DR. DICKEY:  I'm sure.  Other questions?  
12      General Myers.

13                  GENERAL MYERS:  Good brief, Paul.  The  
14      relationship with the VA, how good is it really?

15                  CAPTAIN HAMMER:  I have three VA  
16      employees.  The major one is my deputy -- one of  
17      my deputy directors for VA coordination.  So  
18      that's actually pretty good.  Like I said, we have  
19      -- the Integrated Mental Health Strategy is a  
20      joint DoD-VA project.  So we have a pretty good  
21      relationship with the VA.  I think we're working  
22      to improve it and to mature it and be more

1 interactive with them but we have a lot of good  
2 interaction with them.

3 GENERAL MYERS: Let me test that a  
4 little bit.

5 CAPTAIN HAMMER: All right.

6 GENERAL MYERS: My understanding is the  
7 VA -- one of their centers for TBI is down at  
8 McGuire, just down in Richmond. Have your folks  
9 been down there? Is there a dialogue with the  
10 doctors down there that are treating many cases of  
11 TBI? Now, there are severe cases. Most cases are  
12 (inaudible).

13 CAPTAIN HAMMER: Yeah, because they're  
14 polytrauma centers. They're mostly severe TBI.  
15 Richmond, I believe, is one of our DVBIC  
16 polytrauma center sites.

17 GENERAL MYERS: But, I mean, is there  
18 some kind of relationship?

19 CAPTAIN HAMMER: We have people there.  
20 Yes, there is a relationship there.

21 GENERAL MYERS: Okay. How do you handle  
22 -- under this current organization that you're

1 going to -- how do you handle real controversy?  
2 Let's say you come up with some, you know, you're  
3 looking at all the research and you say, hey, we  
4 ought to go this direction in treatment, for  
5 instance, and the Army Surgeon General says I  
6 don't think that's a smart idea. Now, I know that  
7 never happens actually. (Laughter) But I  
8 actually have seen it. The Surgeons General of  
9 the Services have a lot of power.

10 CAPTAIN HAMMER: Yes, sir.

11 GENERAL MYERS: And now you're stuck  
12 under one of them.

13 CAPTAIN HAMMER: Yes, sir.

14 GENERAL MYERS: And I'm just wondering  
15 how do you -- what's the relief valve to  
16 promulgate good ideas?

17 CAPTAIN HAMMER: I think the relief  
18 valve is the dotted line in the other direction  
19 with Health Affairs. And hopefully looking at the  
20 CoE Advisory Board. Now, again, they've only  
21 stood up. They only had a few meetings and  
22 they're only a couple of months old. But I think

1 -- let me back up. This whole concept of the  
2 Center of Excellence is a very new concept. I  
3 don't think it's -- it wasn't as if somebody was  
4 going, oh, my God. We really need these Centers  
5 of Excellence. They sort of got legislated and so  
6 DoD had to do it. So now that we have them, what  
7 are we going to do with them? And how do we  
8 utilize them? And what is their role and what do  
9 they -- a lot of my task I see is sort of trying  
10 to think through that in a way and also think  
11 strategically, at least a few years into the  
12 future, to understand how will it be when we don't  
13 have the war and it isn't in our face and so  
14 acute?

15           So your point is, yes, we are going to  
16 have to hash out some of those issues of what if  
17 one Surgeon General wants to go one direction and  
18 the other two don't? And that's the one that owns  
19 me. It may be difficult. I think the dotted line  
20 to Health Affairs and to the SMMAC is probably the  
21 way to hash those controversies out but we'll have  
22 to look at a mechanism to take issues of the chain

1 of command and then -- as anything it's, you know,  
2 okay, what battle do you really want to fight? Is  
3 that a significant enough battle to fight or is it  
4 (inaudible)?

5 GENERAL MYERS: Right. No, that'll be  
6 your decision or the decision of the folks there.

7 The other question is on the diagram you  
8 stole from General Robb, or modified or whatever,  
9 is your -- give me some more detail on how -- who  
10 you can reach out to. It's obviously not just  
11 governmental agencies. On the chart you at least  
12 indicate you can go to private sector but are you  
13 allowed to pretty much go anywhere you want to to  
14 gather data? I mean, are there any restrictions  
15 on you, I guess?

16 CAPTAIN HAMMER: No, sir. I don't think  
17 there are any restrictions on that. We have to be  
18 careful about relationships that we have with  
19 governmental contracting kinds of things to make  
20 sure that we don't violate anything or cause any  
21 problems for anybody by having a unique  
22 relationship with one entity that then they're

1 going to put in a proposal or something, you know.  
2 But in terms of academic sorts of things, I think  
3 most organizations are very open to having us be  
4 involved with them and having a relationship at  
5 least in terms of sharing information. So we have  
6 a lot of informal relationships right now. We  
7 used to have some component centers with the  
8 Center for Deployment Psychology and the Center  
9 for Studies of Traumatic Stress. We still have a  
10 relationship with them. We still have a  
11 relationship with USUHS. We look at other academic  
12 centers. But again, we have to be careful when it  
13 involves research, that we're not poisoning the  
14 well, so to speak, if people want to go get  
15 proposals or that sort of thing.

16 But in terms of coming to conferences,  
17 to participate in conferences, to being  
18 collaborative in helping people get projects  
19 started, there's -- nobody has put any  
20 restrictions on me other than there's enough time  
21 in the day to do all that stuff. So other than  
22 just practical prescription, there's no real

1 restriction.

2 GENERAL MYERS: Thank you.

3 DR. DICKEY: Dr. Lockette.

4 DR. LOCKETTE: I just want to follow up  
5 to the General's question because it may not be  
6 clear. I chair the Centers of Excellence  
7 Oversight Committee and there was the concern  
8 expressed that if you give the executive agency --  
9 give the center to an executive agent that it may  
10 bias the views of one particular service. The  
11 Centers for Excellence Oversight Board can  
12 actually field those kinds of concerns. And then  
13 what the SMMAC is, for those who don't know, is the  
14 Senior Military Medical Advisory Committee, which is  
15 composed of all Surgeons General. So  
16 operationally the way this would work in terms of  
17 chain of command is the Centers of Excellence  
18 Oversight Board would bring those kinds of  
19 discussions to the Senior Military Medical Advisory Committee,  
20 which would then allow discussion among all the  
21 Surgeons General and the ASD for Health Affairs  
22 for resolution.

1                   GENERAL MYERS: Thank you.

2                   DR. DICKEY: Yes, sir.

3                   MAJOR GENERAL ROBB: As I watch the Joint Theater  
4 Trauma System mature, in fact, raise of hands, how  
5 many people here have been part of that? All  
6 right. So what you see is that the Joint Theater  
7 Trauma System, which the center of gravity is the  
8 ISR which then belongs to MRMC, you can see the  
9 good and the jointness that came out of that. And  
10 I really believe that MRMC is a lot more joint  
11 than folks give it credit for. The portfolios are  
12 jointly staffed. The agendas are -- things go up  
13 to be solved for joint solutions. Sir, I don't  
14 think we have to worry too much about it being  
15 dominated by one Service. And again, if you want  
16 to look at the success model, look at the ISR is  
17 the center of gravity and then you'll see what I  
18 say, DCoE would be the center of gravity for the  
19 psychological health in the TBI area, much like  
20 the ISR is for the continuum of care. And when  
21 you look at the continuum of care for the ISR,  
22 even though it's the Institute of Surgical

1 Research, they reach out from tactical trauma  
2 casualty care, all the way back to polytrauma and  
3 rehab. And they've brought those, again,  
4 intellectual capacity all together working for a  
5 same common end state. And I believe the vision  
6 will be the same here. And I think hanging it on  
7 MRMC, and again with a success model like we've  
8 seen before, I think it's going to set us up for a  
9 future of nothing but good for the Department of  
10 Defense and the VA.

11 DR. DICKEY: General?

12 GENERAL MYERS: We may be finally  
13 organized properly with this particular issue,  
14 which is good. But I guess I'm going back to --  
15 what I would like to -- hope we don't do is go  
16 back to early the last decade where we didn't --  
17 we first ignored -- we didn't know about the  
18 problem. We ignored it when we brought it up, and  
19 so we've got thousands out there untreated. And I  
20 don't know if there was Services bias in that or  
21 not. I'm not commenting on that but we didn't  
22 handle it well. Now, we may have -- at least

1       that's my impression. We're starting to get our  
2       arms around it a little bit. We're better  
3       organized but I hope we -- this is not an area  
4       that is a well understood and, I mean, just look  
5       at that. The thickest thing in one of your  
6       handouts is all the medications. This may not be,  
7       you know, you treat symptoms. It may not treat  
8       the disease. I don't know. I'm not a doctor.

9                But that's impressive that we have that  
10       much on medications and very little on everything  
11       else. I'm just hoping that you have the freedom  
12       of initiative that when the research indicates  
13       that we can take steps to come up with better --  
14       on the continuum of care, the diagnosis to  
15       treatment and the rehab piece a little more  
16       aggressively than we seem to have done in the  
17       past. That's my -- that was my concern. And it  
18       looks like -- I have no problem with the way it's  
19       organized. I think it's good we're now organized  
20       and that's comforting, General Robb, but, you  
21       know, where it's placed now is probably  
22       appropriate.

1                   CAPTAIN HAMMER: I think I have the  
2 range of freedom or the range of initiative to be  
3 able to do all that.

4                   DR. DICKEY: Thank you, Captain Hammer,  
5 for an excellent presentation. If you continue to  
6 make this kind of progress each year we'll have  
7 you back once a year to tell us about other great  
8 things that are going on. And thank all of you  
9 for a good discussion. The Center has come a long  
10 way since our last presentation.

11                   We really just finished a break so if we  
12 can let's keep going. Our second speaker this  
13 morning is Dr. John Gandy. Dr. Gandy currently  
14 serves as an emergency medicine physician from  
15 Shenandoah Emergency Physicians in Woodstock,  
16 Virginia. He recently retired from the U.S. Air  
17 Force with his final duty assignment as Chief of  
18 Aerospace Medicine, Detachment 3, Air Force Flight  
19 Test Center in Las Vegas, Nevada. Dr. Gandy  
20 participated in numerous worldwide deployments  
21 supporting Special Ops forces.

22                   He's also a member of the Trauma and

1 Injury Subcommittee and will present an  
2 informational brief on behalf of the Subcommittee  
3 chair regarding the potential addition of ketamine  
4 to the Tactical Combat Casualty Care guidelines.  
5 Board members can find this presentation under tab  
6 6 of your meeting binders. Dr. Gandy, we're  
7 delighted to have you with us and look forward to  
8 your presentation.

9 DR. GANDY: Thanks. Well, good morning.  
10 And thanks for that introduction. I appreciate  
11 the opportunity to talk to you guys. I try to  
12 restrict my lecturing and teaching to audiences  
13 where I'm the smartest person in the room, and  
14 today is not going to be such a good day for me  
15 I can tell. I've got many -- many former  
16 instructors, mentors, senior enlisted folks that  
17 squared me away a time or two along the way and I  
18 look forward to sharing with you what I have  
19 today. I was thinking I saw General Taylor here.

20 The last time I spoke to a group that  
21 was this impressive it was the -- I can't remember  
22 if it's called the Corona something. It's all the

1       medical generals of the Air Force all in one  
2       location and I'd just come back from Afghanistan  
3       and they said, hey, we want some guy to give us a  
4       -- and I'd written a little after action report  
5       because I was a major and I had a lot to say. And  
6       some of it wasn't so nice. So they got forwarded  
7       up. My boss made me go do a presentation for the  
8       Corona. So I knew I was in trouble. They say,  
9       "Hey, show up in your flight suit or you BDUs.  
10      You know, so it's in Omaha, Nebraska. I fly in  
11      that night, go to the DLF, get up the next  
12      morning, walk across the street to the meeting  
13      room. And I walk in. Everybody's in dress blues,  
14      except for me in the flight suit. Right? And  
15      the lady who is checking me in is a full berth  
16      colonel. I'm a major. I'm the only major there.  
17      General Taylor may remember this. We're at the  
18      Corona.

19                    So I give my briefing as a major about  
20      my experiences in Afghanistan and there's a lot of  
21      turmoil in the room and he comes up to me  
22      afterwards and says -- hands me a coin instead of

1 shaking my hand and said, "Thanks, John. You may  
2 want to leave now." (Laughter) And I did. I  
3 went straight to the airport from there. So I  
4 guess it got pretty interesting right after that.

5 Today we're going to be talking a little  
6 bit about battlefield analgesia. And the reason  
7 I'm going through the history piece of this before  
8 we get to the ketamine piece is I'd like to have  
9 this as the first of several changes to the TCCC  
10 guidelines as we go along because I think this  
11 group understands what military medicine has  
12 contributed to trauma care and to medicine in  
13 general, but if you look at battlefield analgesia  
14 from the time of wounding all the way back to  
15 Walter Reed, we maybe have some gaps. We may have  
16 some areas where we could be improving, and we may  
17 have been very dogmatic in our treatment of pain  
18 over the last 100 years or so. And having  
19 probably been guilty of that myself, I'm a convert  
20 now and I believe that pain should probably be  
21 treated. And some other people that believe that.

22 What an infinite blessing was the quote

1 from one of the combatants in this war, the battle  
2 that's depicted here. And those of you who have  
3 had severe pain and had it treated would probably  
4 agree that that is an infinite blessing. Those of  
5 you who have had severe pain and didn't have it  
6 treated could probably attest to the fact of the  
7 physical and emotional toll it takes on you when  
8 you're hoping to get that pain resolved. Right?

9           So this is the Battle of  
10 Chancellorsville, just down to Fredericksburg. Go  
11 west a little bit, about 20 miles.

12           And the person that was quoted here is  
13 -- the young man on the left side of the screen is  
14 General Stonewall Jackson. He had had a very good  
15 day on the battlefield. Had been victorious.  
16 Nightfall came. He went out to recon the battle  
17 plan for the next day with some of his staff. On  
18 the way back in their hit their own sentries and  
19 somebody said, "Halt, who goes there?" about the  
20 time they shot them. And then, of course, they  
21 yelled back, "Don't shoot. It's General Jackson."  
22 And the major-in-command said, "It's a damn Yankee

1       trick. Fire." And they shot him again. So he  
2       got shot three times. Once in this arm, twice in  
3       this arm. And of course, nobody really cares  
4       about that in this room. Everybody wants to know  
5       who's the surgeon. Right? Who did his case? As  
6       we all do. Who did the case?

7                       SPEAKER: Hunter Holmes McGuire.

8                       DR. GANDY: Hunter Holmes McGuire.

9       Right. From Winchester, Virginia, who had trained  
10      in Philadelphia and also had trained at Tulane.  
11      That's why I was wondering if Norm -- Norm, did he  
12      train under you at Tulane? (Laughter) Was he any  
13      good? Yeah, right.

14                      So he did a little work down in Tulane,  
15      too. And he quoted -- and they had this quote as  
16      he was going under anesthesia with a chloroform  
17      gas. And he is said to have said, "What an  
18      infinite blessing." And then he just kept  
19      repeating "blessing, blessing, blessing," as he  
20      went unconscious. The bad news is that all the  
21      trauma surgeons in the room will identify that he  
22      died of an anesthesia complication about eight

1 days later. (Laughter)

2 So, but you see 1863 we're talking about  
3 here. And this was the Spanish-American War,  
4 maybe the first time they used gas anesthesia and  
5 then the Civil War used it a lot at that point.  
6 So a big change at that point.

7 A little bit about our agenda for this  
8 morning. I want to talk about the importance of  
9 early pain control, a little bit about the  
10 history, the current state of battlefield  
11 analgesia, the future of far-forward pain  
12 management, and then I'll get into the FARDA,  
13 which is a decision brief that I'll be presenting  
14 to the TCCC Committee and the Trauma and Injury  
15 Subcommittee tomorrow. So you guys are getting it  
16 a day ahead of time.

17 So what about the consequences of  
18 untreated pain? You know, I think for a long  
19 time, and I can say I was guilty of ordering 800  
20 mg. of "suck it up" more than one time in my  
21 career. And I think as we get more and more  
22 evidence to say that pain -- untreated pain and

1 pain that's severe and treated and then allowed to  
2 get severe again, you know, in a pattern of pain  
3 controlled, pain uncontrolled, pain controlled,  
4 uncontrolled. Both of those can cause long-term  
5 effects. The pain management folks describe that  
6 as the pain pathways sensitization. So they're  
7 kind of up-regulated and they stay that way and  
8 then they require more and more pain medicine to  
9 get them under control.

10           This leads to chronic pain syndromes.  
11 If you work in an emergency room like I do, you  
12 see these people every day who, when I ask them  
13 what I can do for you today they say, "Make the  
14 pain go away." And I try to tell them I'm  
15 probably not going to be able to do that but maybe  
16 we can get it to a controllable level for you  
17 today. So that's chronic regional pain syndrome.  
18 It used to be called reflex sympathetic dystrophy  
19 and fibromyalgia. This, of course, leads to  
20 short- and long-term abuse of narcotics,  
21 especially if it's the only drug you have. And  
22 narcotic addiction can lead to depression. If you

1 see these people in chronic pain, they look  
2 depressed. And if you've ever experienced chronic  
3 pain you know that it probably will cause severe  
4 depression. And there's a link between post  
5 traumatic stress disorder and untreated pain on  
6 the battlefield. It's, you know, it's not that  
7 great a correlation but it makes sense if you  
8 think about it.

9           So what about the history of battlefield  
10 analgesia? As early as man has been on the  
11 battlefield they've been trying to treat the pain.  
12 Opium and different opium products have been drunk  
13 on the battlefield and for recreational purposes  
14 for as far back as recorded time. Of course, wine  
15 and grog and rum, I guess, growing up watching  
16 cowboy movies it's, you know, a bottle of whiskey  
17 when you get shot. The same idea. A patient can  
18 control (inaudible). You just keep drinking it  
19 until the pain goes away.

20           Morphine was isolated from opium in 1803  
21 by a guy named Friedrich in Germany. A scientist  
22 maybe. Maybe akin to the guys you'd have, you

1 know, with a trailer out in the woods in West  
2 Virginia using a lot of electricity and  
3 hydrocarbons to make their meth. He was an  
4 experimenter and maybe a user himself. But he was  
5 able to get morphine isolated from opium. There's  
6 some documents that say they may have had morphine  
7 in the Byzantine Empire but they kind of lost the  
8 formula somewhere along the way. I don't know who  
9 was in charge of it but somebody lost it.

10           The hypodermic needle was invented in  
11 1850ish and that kind of made it more easy to use  
12 on the battlefield by just giving an injection.  
13 It was pretty widely used, morphine was, for pain  
14 control during the Civil War. Moving forward to  
15 WWI, the main pain medicine was morphine. In  
16 WWII, the main medicine on the battlefield was  
17 morphine. And then you kind of see a pattern  
18 developing here. And morphine was used and we  
19 never really I don't think looked for much else.  
20 It was the gold standard. It's what all the other  
21 pain medicines -- narcotic pain medicines are  
22 judged against, their ability or their comparison

1 with morphine. It's reigned on the battlefield  
2 for more than 150 years, and many in the  
3 anesthesia and pain management fields feel that  
4 it's an outdated medication.

5           And I think from a provider perspective,  
6 if you've taken care of hurt people, really hurt  
7 people, you understand that one agent, just  
8 morphine alone, may not get rid of your pain in a  
9 polytrauma patient. You may need other agents,  
10 different classes of medications, more newer,  
11 stronger medications. And I can remember the days  
12 of -- well, I gave you -- look, I saved your life  
13 and now you're complaining of pain. I've given  
14 you 30 mgs of morphine. What else do you want me  
15 to do? And that's really not good enough just to  
16 save their life anymore. Now we have to say not  
17 only are we going to save your life but we have to  
18 think about what kind of life are we going to give  
19 you after you recover? So when does recovery  
20 start? Recovery starts right after you get  
21 wounded. Right? So from then on you're  
22 recovering. So you have to kind of change your

1 mindset a bit and it looks like I have had to over  
2 the years.

3           So this is a quote from a mid-level  
4 provider who had taken a trip to Baghdad in 2003.  
5 He said, "Pain control in Baghdad 2003 was the  
6 same as in the Civil War; A nurse with a syringe  
7 full of morphine." I'm not saying that morphine  
8 doesn't have a place on the battlefield. But I  
9 think we can look and see that there are other  
10 options available to us that may control pain  
11 better.

12           So morphine predominated on the  
13 battlefield until -- I can't remember the exact  
14 date, Frank, but maybe you can help us out. A  
15 rogue band of medical heretics proposed a change.  
16 It was the great 2001-2002 fentanyl lollipop  
17 debate back when the TCCC Committee was -- we were  
18 using the back of envelopes and meeting in a  
19 minivan that we rented. So it was a big fight to  
20 add something new to the TCCC protocols. We knew  
21 that fentanyl worked. We knew it was a good  
22 medication. And this was a novel way of giving

1       it. Basically, a patient- controlled analgesia.  
2       You lick the fentanyl lollipop and you lick it  
3       until your pain goes away and then you quit  
4       licking it and then you lick it some more when the  
5       pain comes back.

6                        So what's the problem with that? Well,  
7       the FDA has a black box warning on fentanyl which  
8       says it can only be used for cancer breakthrough  
9       pain in people that are opiate tolerate. And, you  
10      know, I think it's kind of -- I'd say it's  
11      discrimination to only treat cancer pain patients  
12      when other people have pain as well. So if you  
13      think of a polytrauma multi-amputation blast  
14      injury patient, he's got severe pain. He needs  
15      strong medicine to get rid of that pain or to  
16      control that pain. But we argued about it for  
17      several days and finally decided to go ahead and  
18      push forward. We asked the FDA why there was that  
19      black box warning and we asked them for about  
20      seven years before they actually returned our  
21      call. And the reason -- the cases that they sent  
22      us were almost all non- accidental overdoses of

1       fentanyl and people that decided they wanted more  
2       of it, to the point that they were unable to  
3       breathe anymore. And that happens with all pain  
4       medications.

5                    Just on the side, self-reporting abuse  
6       of drugs by physicians, what group do you think is  
7       the number one abuser of drugs?

8                    SPEAKER: Psychiatrists.

9                    DR. GANDY: You've got to remember this  
10       is self- reporting. It's emergency medicine  
11       physicians. What's their drug of choice?  
12       Marijuana. We're going to go rock climbing after  
13       work, you know, dude. And so number two is  
14       anesthesiologists. Do you know what their number  
15       one drug of choice is? Sufentanil, which is 10  
16       times stronger than fentanyl. Right? So there's  
17       a different -- let's just say the  
18       anesthesiologists know which pain medicines work  
19       really well. Right? None of them are abusing  
20       morphine if they have a choice. (Laughter)

21                    So current status of battlefield pain  
22       management. And I put these in this order for a

1 reason. The first, you've got nonsteroidal  
2 anti-inflammatory drugs and Tylenol. Right? And  
3 then under that is morphine, intramuscular  
4 injection of morphine. Okay? And then as you'll  
5 notice when we see the TCCC guidelines later,  
6 there is no IM morphine recommended in the TCCC  
7 recommendations. And then we go oral narcotics,  
8 morphine IV, fentanyl lollipop, fentanyl IV,  
9 dilaudid, ketamine. And I put these on here  
10 because they're being used on the battlefield  
11 every day. They have been used on the battlefield  
12 every day. But what we have is a case of the  
13 haves and the have-nots.

14           So if you look at Special Operations,  
15 Special Mission Units, Ranger Battalion, et  
16 cetera, you'll see these newer, stronger  
17 medications. If you look at the line Army, Marine  
18 Corps, corpsmen, et cetera, they're going to be in  
19 those top two. IM morphine and oral non-narcotic  
20 medications. So the effort of the TCCC Committee  
21 to get fentanyl lollipops out there has been  
22 largely unsuccessful outside of Special

1       Operations.  Other units won't allow their medics  
2       to buy -- to purchase these because there's a  
3       black box warning on it by the FDA, even though  
4       we've proven that it can be used safely and  
5       effectively on the battlefield.  So, you know, we  
6       have the haves down here and the have-nots up  
7       here.  And something that we need to talk about  
8       some more is that just because we make  
9       recommendations doesn't mean that Surgeon Generals  
10      and leaders of the different Medical Corps are  
11      going to implement those.  Right?  We make  
12      recommendations as the TCCC Committee.

13                 So what's the future of battlefield  
14      analgesia?  And I think most of you probably know  
15      Tripp Buckmeyer, right?  He's the anesthesiologist  
16      in the Army and he's been going around telling us  
17      over and over again to anybody who will listen,  
18      but it's multi-modal pain management.  And so it's  
19      early treatment with different classes of  
20      medications so you use more than one class of  
21      medication.  You use blocks -- different blocks,  
22      regional blocks, that sort of thing.  And then you

1     make sure that you don't let the pain come back  
2     after you get it controlled, you know, which for a  
3     while I know in the chain going back towards  
4     Landstuhl and then back across the pond, sometimes  
5     we weren't doing that good of a job and the guys  
6     would report pain well controlled. You know, and  
7     then pain not well controlled in or out. Pain  
8     well controlled. Pain not controlled. And that's  
9     not good for the overall outcome.

10             And the reason why, you know, it makes  
11     sense if you use different medications that work  
12     through different modes of action then you don't  
13     have to use as much of any medication. With every  
14     medication, the more you use it the more you push  
15     towards the side effect profile of that  
16     medication. Right? So if you use more and more  
17     morphine you're going to get the side effects if  
18     you keep using more versus if you use some  
19     morphine, some ketamine, some regional blocks,  
20     some barbiturates, depending on what you're doing.  
21     But the idea is that you attack it from multiple  
22     different directions.

1                   So I put new medications on here because  
2 they will be new to many people on the  
3 battlefield. Like I say, Special Operations  
4 forces and Special Mission Units have been using  
5 these with great effect. I think if you look at  
6 what the -- and when we did the First Responders  
7 Conference, all the junior medics that got sent  
8 over with the regular Army units and Marine Corps  
9 units, their choice was still IM morphine. And  
10 when Captain Butler made them all stand up after  
11 they told of these horrific injuries that they had  
12 taken care of, multiple casualties, and made all  
13 the guys stand up at the end and said what did you  
14 use for pain medicine? IM morphine. And what was  
15 their pain level when they started? Ten. What  
16 was the pain level when you evaced them an hour  
17 later? Ten. Went straight down the line except  
18 for the one kid who said it was 10. And what was  
19 it when you evaced him? Six. Five. And the kid  
20 didn't want to tell but what he had done is he  
21 takes his auto injector and injects it into a 250  
22 bag of saline and lets it run in an IV because he

1       can give IV saline. So he was smart enough -- he  
2       put the morphine in the bag and ran it in. But,  
3       of course, he knew he was about to get in trouble  
4       when he told us that at that meeting.

5                   But these medications have been out  
6       there for a while and we'll talk a little bit  
7       more about their use in the civilian world here in  
8       a minute. And then routes of medication that  
9       administration for ease of use. So there have  
10      been all sorts of talk about using patches and  
11      transdermal things. Transbuccal, which we're  
12      using the fentanyl lollipop. Intranasal. If you  
13      look back, I know the bisque, which some of you  
14      know what that is, but I was looking back at some  
15      of the meeting minutes and we've been given money  
16      through some company named Javelin, I think, for  
17      about seven, eight years now to develop some  
18      intranasal ketamine for battlefield use. I looked  
19      on line. It looks like they're about to go into  
20      receivership. I don't know if that's a good use  
21      of our money or not. But we've been talking about  
22      it now since 2004 but we haven't been doing it.

1 And intranasal route, most people have a nose that  
2 works in some way. I envision, you know, for the  
3 non-IV starting medic, that you would have either  
4 one syringe of fentanyl and one of ketamine and  
5 you go like this and give them a little shot  
6 through their nose and, you know, five to eight  
7 minutes later they feel a lot better. Or you'd  
8 give them another dose. And it sounds pretty  
9 simple and like I say, it's being used as we'll  
10 talk about in the civilian world already. We've  
11 spent a lot of money trying to develop the special  
12 pump but I think if we can get a syringe and a  
13 nasal atomizer you'll probably get a similar  
14 result.

15 So this is just to show you that  
16 fentanyl is in use. Fentanyl is the drug of  
17 choice for EMS units, especially air medical  
18 units. However, in my research I looked at the  
19 West Virginia protocols. Any of you guys from  
20 West Virginia? Anyone? No. Okay. So they're  
21 not really known for their medical care in West  
22 Virginia. I'm just going to say that. All right?

1 (Laughter) I have a license in West Virginia.  
2 I'll say that I do but they have a few meccas and  
3 then large areas of nothing as far as medical  
4 care. But the state of West Virginia is taking  
5 morphine off their protocols and putting fentanyl  
6 on their protocol. So if West Virginia is ahead of  
7 us we may be a little behind the power curve. I'm  
8 just saying.

9 And this is Denver area metro EMS. It's  
10 like 20 different EMS organizations around the  
11 Denver area. This is their standardized protocol.  
12 And not only do they have fentanyl, but you'll see  
13 that they have it by the intranasal route. IN,  
14 intranasal route for adults, intranasal route for  
15 pediatrics. Right? So they're doing this in the  
16 back of the ambulance, not at the hospital, using  
17 fentanyl intranasally. I found four other  
18 different EMS organizations that were doing that.  
19 There have been four or five studies about  
20 kids with arm fractures in the emergency room.  
21 You give them a shot of intranasal fentanyl at  
22 triage, they go get their x- ray, they're happy.

1 You don't have to start an IV, you know, unless,  
2 of course, you're going to have to manipulate the  
3 bone. But if it's just to get them their pain  
4 controlled and get them through to getting a  
5 splint on, you know, why do you have to start an  
6 IV or give them a shot of morphine when you can  
7 just put fentanyl intranasally up their nose and  
8 get as good a pain control and get it quicker.

9           So just to let you know that we're not  
10 really breaking new ground if we move towards some  
11 of these newer medications and newer routes of  
12 administration. And all of you who practice, you  
13 all use medications that are off label probably  
14 every day. If you have a specialty, there's  
15 something that you use that is off label and you  
16 use it every day in your practice and it works and  
17 everybody in your specialty society knows it works  
18 and you don't even talk about it because it's not  
19 really applicable to what you do, which is provide  
20 good care for your patients safely.

21           So this is a shot of a paramedic giving  
22 the kid with a broken arm a little shot up the

1 nose. And like I say, there's a lot of  
2 organizations spending a lot of money to develop  
3 this special pump, you know, prepackaged pump of  
4 ketamine when all you need is a syringe, a lure  
5 lock and one of these mucosal atomization devices  
6 which are for sale for -- I mean, literally, I  
7 don't know how much they cost. I don't know. It  
8 can't be more than a few bucks. It's a piece of  
9 Styrofoam and a little nozzle. And you can buy  
10 them at -- all the tactical or EMS organizations  
11 that sell EMS equipment have these. And you just  
12 squirt it and it atomizes it into the small  
13 particles and you get the effect you want.

14 I'll talk some more about how ketamine  
15 is used intranasally here in just a minute. Oh,  
16 and I did find at least one study that showed that  
17 where people had been thinking about this before  
18 and that you could put ketamine and morphine in  
19 the same syringe or in the same packaging and it  
20 would be stable. And they checked it up for like  
21 six months and found the activity of both was  
22 good. There's no precipitation, that sort of

1 thing. So, you know, if you're thinking ahead you  
2 could put fentanyl and ketamine in a single  
3 syringe with one of these devices on it and get  
4 quick, powerful pain relief through a multi-modal  
5 mechanism.

6           So let's talk about ketamine  
7 specifically. And once again I'll say that this  
8 has not been vetted through the TCCC Committee and  
9 we may have some discussions about the actual  
10 doses and routes and those things when we get  
11 together tomorrow, different opinions on that. I  
12 think all in all, most people are onboard that we  
13 need to add new medicines for analgesia.

14           So ketamine is a derivative of PCP. I  
15 think Park Davis found it in 1962. It's an NMDA  
16 receptor agonist at most dosages. At higher  
17 dosages you actually get some mu receptor, just  
18 like the opioids. But most receptors -- most of  
19 the levels we're talking about, most of the  
20 mechanism of action is through NMDA receptors. At  
21 lower doses, potent analgesic and mild sedation;  
22 higher doses, dissociative anesthesia and moderate

1 to deep sedation. It gained popularity in the  
2 U.S. in clinical practice in the '90s. In  
3 Europe, it's been popular for much longer than  
4 that. Our NATO allies will tell us that they've  
5 been using it successfully for much longer than  
6 us.

7           It's unique among anesthetics because  
8 the pharyngeal-laryngeal reflexes are maintained  
9 and the patients continue to breathe on their own  
10 despite being anesthetized. It's also unique in  
11 that unlike most anesthesia medications it  
12 stimulates cardiac activity rather than depressing  
13 it so your heart rate and blood pressure may go up  
14 a little bit. And it works reliably by numerous  
15 routes -- oral, rectal, intranasal, IM, IO, IV,  
16 intrathecal. You name it, it works on all of  
17 them. So however you want to get it to them, it  
18 will work.

19           It's a racemic mixture of both S(+)-  
20 ketamine and R(-)-ketamine stereoisomers. The S(+)-  
21 ketamine is thought to be the more potent  
22 analgesic and anesthetic. R(-)-ketamine is thought

1 to be responsible for more of the side effects  
2 that you see from ketamine. S(+)-ketamine is what  
3 they use in Europe, the purified S(+)-ketamine  
4 mostly. And in the U.S., mostly available as the  
5 racemic mixture.

6           So what do they use ketamine for?  
7 Currently, as a single-agent surgical anesthesia  
8 in austere settings and developing countries.  
9 Ketamine is on the World Health Organization's  
10 List of 100 Essential Medications. So they have a  
11 list of things if you have to go somewhere and can  
12 only take 100 medicines, take this one with you.  
13 It's used for anesthesia induction, procedural  
14 sedation. We use it often in the emergency  
15 department to reduce shoulder, reduce fractures,  
16 to do burn dressings, things like that on  
17 pediatrics. Sometimes you even use it to get  
18 children to lay still while they get CT scans,  
19 that sort of thing. It works pretty good.

20           Perioperative pain management. More and  
21 more as more of the population becomes opioid  
22 tolerant, when you take these people to surgery

1 and you're already on three or four different  
2 opioids before you go to surgery, the idea that  
3 how are we going to control their pain after they  
4 have surgery, that's a big question. And they've  
5 done several different studies that show that  
6 maybe a ketamine drip through the operative period  
7 and then extending post-operatively will help  
8 reduce or be an opioid-sparing drug so it will  
9 bring the amount of opioids that you have to use  
10 down a bit.

11           It's been used for cancer breakthrough  
12 pain. And guess what route they're using it for  
13 cancer breakthrough pain? Intranasal. So they're  
14 using it intranasally for cancer breakthrough pain  
15 and with good results. I think that was the same  
16 company -- I want to say it's Javelin -- that was  
17 doing those studies and had good results. And  
18 that was three or four years ago that those  
19 results were released. Also used for migraine  
20 headaches intranasally. Chronic pain syndromes.  
21 This is the part where, you know, it gets kind of  
22 -- no offense, but it gets kind of like hyperbaric

1 oxygen. It's good for everything. (Laughter)  
2 Chronic pain syndromes, it turns out if you put  
3 people on a ketamine coma, people with chronic  
4 pain syndrome, put them on a ketamine coma for  
5 several days, their chronic pain goes from here  
6 down to here and the effect lasts for much longer  
7 than the half-life of the medicine. Don't really  
8 know why that is but that's what it does.

9           Chronic severe depression. They're  
10 using that for people who are not tolerating  
11 normal medications for severe depression. They  
12 put them on a couple of hours of ketamine drip and  
13 reducing their depression and making them  
14 functional by the time they get off their  
15 ketamine.

16           Narcotic withdrawal. If you need to  
17 withdraw from narcotics you go out to Vegas.  
18 They'll put you in a ketamine coma and kind of  
19 reduce your narcotic need over a couple of days.  
20 So if anybody needs to get hooked up with that let  
21 me know. I get a little kickback. (Laughter)  
22 No, just kidding.

1                   Intubation sedation. It's one of the  
2 medications of choice for severe asthmatics  
3 because it has a bronchodilator effect and the  
4 patient continues to maintain their own  
5 respiratory drive while you're doing the  
6 intubation.

7                   And then sedation for prolonged  
8 extractions in EMS. If you're trapped in your car  
9 or under a heavy object for a long period of time  
10 and you really don't want to remember that too  
11 much, ketamine would be a good choice of  
12 medication to use to help you kind of zone out  
13 from that a bit.

14                   Battlefield analgesia and sedation has  
15 been used since it's been available. Different  
16 areas -- the Thai- Cambodia border, the Falklands,  
17 Iraq, Afghanistan, many other places that it's  
18 been used by other countries as well as the United  
19 States safely and effectively. There are  
20 protocols for its use in the Military Advanced  
21 Regional Anesthesia And Analgesia Handbook.  
22 There's protocols in the USSOCOM tactical trauma

1 protocols, the Ranger Medic Handbook has some  
2 protocols for ketamine use and the Pararescue  
3 Procedures Handbook has -- already has protocols  
4 in place for the use. None of them are exactly  
5 the same but they're all kind of in the same  
6 ballpark and so that's kind of where we're going  
7 with what we're trying to recommend.

8           It has a very favorable safety profile.  
9 Few, if any, deaths, and I say few, if any, deaths  
10 have been attributed to ketamine as a single agent  
11 drug despite large overdoses. So this is from the  
12 FDA insert. Ketamine has a wide margin of safety.  
13 Several instances of unintentional administration  
14 of overdoses of ketamine up to 10 times that  
15 usually required have been followed by a prolonged  
16 but complete recovery.

17           I did a little study on this when I was  
18 in residency and I think the case they're talking  
19 about here was a pediatric patient who was  
20 supposed to get 60 mgs of ketamine and got 600 mgs  
21 of ketamine and slept for two days and then woke  
22 up. You know, no problem. No long-term effect.

1 And if you look at there's two deaths that may  
2 have caused -- been from ketamine. One was ruled  
3 a homicide and the other one was a lady who was  
4 using ketamine daily for more than a year  
5 recreationally because she had a lover on the  
6 other side so she used ketamine to get to the  
7 other side, right, and then she finally decided  
8 she wanted to be with her lover on the other side  
9 forever. And I think when they did the autopsy it  
10 was like 600 times an anesthetic dose of ketamine  
11 in her system. This is Park Davis, the  
12 manufacturer's information. Other than that, if  
13 you look at New York Poison Control information,  
14 they don't have any reports of death just from  
15 ketamine.

16 Okay, so now, that's not to say it  
17 doesn't have side effects. It does have side  
18 effects because originally anesthesia, the guy  
19 said it's going to be the perfect anesthetic.  
20 It's going to be the perfect anesthetic. We're  
21 never going to have to have anything else. But  
22 like most medicines it does have side effects.

1 The absolute contraindications are head injuries  
2 at risk for increased intracranial pressure. That  
3 doesn't mean, you know, you bumped your head-type  
4 of head injury. It means if you've got increased  
5 intracranial pressure you don't want to give  
6 ketamine because it may increase it some more.  
7 The evidence for that is not really that good,  
8 that it should be an absolute contraindication but  
9 it's written so I'm going to write it up here,  
10 too. Glaucoma and globe injuries, same idea. It  
11 can increase your intraocular pressure. And then,  
12 of course, if you're allergic to ketamine you  
13 probably shouldn't take it.

14 Side effects. Elevated heart rate,  
15 elevated blood pressure, hypersalivation, nausea,  
16 some kind of muscular clonus and twitching. And  
17 nystagmus as you get to higher doses you can get  
18 into nystagmus with ketamine.

19 Bad dreams. Ketamine can cause bad  
20 dreams but there is kind of a thought that the way  
21 you go to sleep is the way you wake up. So if  
22 you're very -- if you're prone to having bad

1 dreams in your regular life, you're more likely to  
2 have bad dreams when you're on ketamine, which  
3 means that I would probably like this drug a lot  
4 because my dreams are usually pretty good.  
5 (Laughter) So, but usually, you know, the bad  
6 dreams are not really a major problem.  
7 Hallucinations, outer body experience. And then  
8 emergence phenomena is mostly dose- related. It's  
9 reported in about 12 percent of overall number of  
10 people they get anesthetized with ketamine. So if  
11 you're using ketamine as an anesthetic agent --  
12 emergence phenomena is not just ketamine. There's  
13 other anesthetic gases that will, as you're coming  
14 out of the anesthesia, will give you an emergence  
15 phenomena, which is basically just a very anxious,  
16 confused, disoriented period of time, not  
17 necessarily dangerous but anesthesiologists are on  
18 a tight schedule. They don't want to really deal  
19 with anybody. They're just kind of whooping and  
20 hollering in the recovery or, sorry, the post-  
21 anesthesia care unit. You can't call it the  
22 recovery room anymore. So for them it's a

1       problem, 12 percent. And in kids, it almost never  
2       happens. It's more common in adult females than  
3       males but not by a lot. It usually doesn't happen  
4       in the pediatric population.

5                You can usually treat it with benzos,  
6       barbiturates, and narcotics. Usually lasts, at  
7       the worst, for a couple of hours. Some people  
8       report having hallucinations for up to a day if  
9       they have an emergence phenomena. Once again,  
10       dose- related. Higher doses, more chance.

11               If you take ketamine IV and you push it  
12       in really fast by IV, you can cause some brief  
13       apnea and respiratory depression. Usually, if you  
14       push it in nice and slowly over a minute or so,  
15       dilute it out, usually it doesn't cause any  
16       problems with apnea or depressed respirations.  
17       The treatment for that is assisted ventilation.

18               Kind of common doses of ketamine, if you  
19       look at the literature, they vary widely depending  
20       on what the clinical situation is. If you're, you  
21       know, in Uganda and you want to take somebody's  
22       appendix out and you want them to be asleep for a

1 little while you're going to use a higher dose  
2 than if you're in my emergency room and I just  
3 want to put your shoulder back in place. Right?  
4 So surgical anesthesia, surgical induction and  
5 procedural sedation, and then analgesia would be  
6 kind of the dosing range where we're talking about  
7 starting out with ketamine as a battlefield  
8 analgesia.

9 All right. So once again I'll say this  
10 has not been vetted by the TCCC Committee as a  
11 whole. For those of you who haven't seen these  
12 recommendations before, this is kind of the format  
13 that the guidelines are in and pretty much you can  
14 see if the person is able to fight and they have  
15 no severe pain you can give them Tylenol or Mobic  
16 and put them back in the fight. If they are not  
17 going to be in the fight anymore, then we  
18 recommend -- and they don't need an IV for any  
19 other reason than they recommend using the  
20 fentanyl lollipop.

21 If you're going to put an IV or IO in  
22 otherwise, right now we recommend IV morphine in

1 doses with reassessment every 10 minutes or so,  
2 monitoring for respiratory depression. Right now  
3 we still have the Phenergan or Promethazine as our  
4 anti-nausea medicine on the protocols and we  
5 haven't addressed that yet but we may give you  
6 some other options here soon.

7           And this is the part where we're talking  
8 about a change. And I'll read this because most  
9 of the guys haven't seen this yet. For patients  
10 with persistent severe pain after treatment with  
11 narcotics or patients in whom narcotics are  
12 contraindicated and they don't otherwise need an  
13 IV or an IO, ketamine 100 mgs IM repeat dose every  
14 30 minutes to one hour as necessary to control  
15 severe pain. If you're going to put in an IV or  
16 an IO, then give ketamine 20 mgs slow IV push over  
17 one minute, reassess in 5 to 10 minutes, and  
18 repeat the dose as necessary to control severe  
19 pain up to five doses or until the patient  
20 develops nystagmus. Nystagmus, rapid eye  
21 movement, is a side effect of ketamine that's  
22 known. And when you get to a certain level of



1 the discussion instead of going to the next slide.  
2 But in closing, you know, I would just like to say  
3 again I think we have some room for improvement in  
4 the battlefield analgesia through the care  
5 continuum and I think we need to start making  
6 little steps to get these medications out to the  
7 field and get the medications -- the medics  
8 trained on them, get them used to using them, get  
9 them comfortable with them, knowing what the side  
10 effects are and then as we do that, as we  
11 introduce new medicines, just keep adding to their  
12 availability and the number of things that they  
13 can do. Having more tools in their toolbox. And  
14 then I think we've proven through multiple  
15 different units, and not just in our country but  
16 in other countries, that ketamine can be used  
17 safely and effectively as a battlefield analgesia.

18 And with that I'll take any questions.

19 No questions? All right.

20 DR. LOCKETTE: I have questions.

21 DR. DICKEY: Thank you, Dr. Gandy. And  
22 we do have a couple of questions.

1 DR. GANDY: Oh, okay. Yes, sir.

2 DR. LOCKETTE: Actually, I had several  
3 quick questions.

4 DR. GANDY: Yes, sir.

5 DR. LOCKETTE: I'm still unclear as to  
6 the FDA, the approved FDA indications for  
7 ketamine. Does it include what you're proposing?

8 DR. GANDY: It does. By IM and ID  
9 routes. It does not mention anything about IN  
10 nasal use of ketamine. And I think the stuff that  
11 Javelin was making was a little single dose  
12 ketamine in a nasal preparation. It pretty much  
13 said the same thing as the fentanyl. You know,  
14 only to be used for cancer breakthrough pain.

15 DR. LOCKETTE: I mean, I guess one of  
16 the things that the Board -- I would ask to  
17 consider because one of the concerns we have is  
18 when recommendations -- and I talked to Rocky Farr  
19 about this this morning -- That when drugs come up  
20 for recommendation as a clinical guideline or a  
21 clinical recommendation where it has not been  
22 sanctioned by the FDA, what we should be doing

1 about that.

2           Secondly, I'm a little concerned not  
3 having seen the meta-analyses of these kinds of  
4 approaches for pain management because I'm  
5 intrigued that racemic ketamine is available in  
6 the United States but the single isomer is  
7 available in Europe. So that tells me that the  
8 patent has expired and that there is a company  
9 looking for expanding market for this drug.

10           The third question I have is it's not  
11 widely used but I thought that was -- I mean, this  
12 drug actually has an interesting history because  
13 it came from the University of Michigan and Ed  
14 Dominiel and it looks like its primary goal of  
15 treatment is going to be -- it seems to be the  
16 most effective antidepressant that's out there  
17 because -- and the reason this is interesting both  
18 from a scientific and a clinical standpoint was  
19 the developer of ketamine asked all of his  
20 patients who were abusing ketamine why they abused  
21 ketamine and their response was it made my  
22 depression go away. So I'm a little confused here

1 by this approach with ketamine, whether its  
2 primary indication is going to be for acute pain  
3 management, chronic pain management, acute  
4 depression or treatment of depression, what the  
5 FDA guidelines and approvals are for before  
6 they're incorporated in our guidelines which may  
7 be at variance with what the FDA has recommended.

8 So several quick questions.

9 DR. GANDY: So for what we're  
10 recommending it's approved by the FDA for  
11 analgesia and sedation. All the way up to  
12 anesthesia. It's not -- I don't think it's  
13 approved for the five day coma or depression or  
14 chronic pain that people are using it for. And I  
15 don't think, you know, anything outside of  
16 analgesia and anesthesia hasn't been approved  
17 although they are doing more and more studies on  
18 that as you eluded to currently. You know, and I  
19 think we're well within the guidelines of -- that  
20 these dosages of what it's approved for for  
21 clinical practice.

22 DR. DICKEY: Quick clarification. We,

1 "who" are recommending?

2 DR. GANDY: We, oh, sorry. It hasn't  
3 been through the TCCC Committee yet. So I. Me.

4 DR. DICKEY: Just for transcript  
5 purposes. I want to make sure who "we" is.

6 DR. GANDY: I am recommending. Sorry.

7 DR. DICKEY: Are there other questions?  
8 Jay.

9 DR. JOHANNIGMAN: Two questions. One is  
10 a personal anecdote. Last year I saw ketamine in  
11 theater for the first time as an adult practicing  
12 trauma surgeon and it was dramatic, the  
13 effectiveness of that. And as CCAT transport docs  
14 we've used ketamine to ablate memory for our  
15 transport troops and I've had the opportunity to  
16 go back and we would use a prep dose and go back  
17 and ask the warriors whether they remember any  
18 adverse things about their whole trip out of  
19 theater and the answer was uniformly no. So I  
20 think there are roles for that.

21 But when you reviewed the literature was  
22 there ever -- to your knowledge has there been a

1 trial of using the combination of a narcotic  
2 analgesic with ketamine in a fixed ratio since  
3 there's a suggestion they work synergistically?

4 DR. GANDY: Not at a -- there are  
5 several studies that were done where they were  
6 using a fixed dose of ketamine in addition to  
7 post-operative analgesia to see who would reduce  
8 the amount of opioid that was used and in several  
9 of them it was the amount of opioid needed was  
10 reduced. And but most of the studies, they  
11 described their pain levels as being similar  
12 between the opioid only and the opioid ketamine  
13 but when you ask them -- when you dug into it a  
14 little more and ask them about their experience,  
15 you know, they said the people who had the  
16 ketamine onboard as well heading back to the  
17 depression piece. But they had a much better  
18 experience when they dug into it just on the raw  
19 scores. You can give enough opioid to get the  
20 pain level down but with opioid and ketamine  
21 combined you had to use less opioid.

22 DR. JOHANNIGMAN: The second question is

1       you gave a nice presentation and I guess tomorrow  
2       we'll have a chance to go over the TCCC but the  
3       dose is one per kilo but you're recommending a  
4       very much more conservative dose of that at 20 IV  
5       push in your proposed protocol.

6                 DR. GANDY: One per kilo IM.

7                 DR. JOHANNIGMAN: Yeah. Or I thought it  
8       was one per kilo IV as well.

9                 DR. GANDY: It starts at -- I think it  
10       starts at --

11                DR. JOHANNIGMAN: It will start at one.

12                DR. GANDY: 0.1 and 0.2 IV.

13                DR. JOHANNIGMAN: Okay.

14                DR. GANDY: So one per kilo IM and 0.1  
15       to 0.2 IV. Now, like I say, for procedural  
16       sedation in the ER, if I'm putting somebody's  
17       shoulder in I'm starting with 0.1 mg per kg IV.

18                DR. JOHANNIGMAN: Because your slides --  
19       maybe we have to look at those because they say 1  
20       mg per kg to 2 mg per kg IV for surgical  
21       induction.

22                DR. GANDY: Right. That's for surgical

1 induction.

2 DR. JOHANNIGMAN: And procedural  
3 sedation.

4 DR. GANDY: Yeah. So derm 1A.

5 DR. JOHANNIGMAN: Yeah. So you're  
6 looking at an analgesic dose.

7 DR. GANDY: Analgesic dose. Right?

8 DR. JOHANNIGMAN: Got it.

9 DR. GANDY: So, yeah, you're exactly  
10 right for procedural sedation we're starting at 1  
11 mg per kg IV and go titrating up from there as  
12 needed.

13 DR. DICKEY: Dr. Jenkins.

14 DR. JENKINS: Thank you, John, for that  
15 presentation. Just a couple of things for you.

16 One, do you know does Tripp have data  
17 based on our recent experience from this morning  
18 that we may use to help us make the keys to show  
19 the benefit of the use of ketamine in the en route  
20 pain management for combat casualties, safety,  
21 efficacy, etcetera, because that's something that  
22 might exist in the JTTR or in Tripp's own database.

1 DR. GANDY: Yeah. I hadn't talked to  
2 him in probably a month and a half but -- you're  
3 talking about -- you said Tripp. Is that who you  
4 --

5 DR. JENKINS: Yeah. So yeah, I hadn't  
6 talked to him in about a month and a half about  
7 that but I have been asking for actual data from  
8 his studies that he's done.

9 DR. JOHANNIGMAN: I think based on our  
10 most recent experience we might need to provide  
11 that.

12 DR. JENKINS: And then like many of the  
13 TCCC guidelines, I'm a big fan of, you know, when  
14 you're putting together the kids' toys on  
15 Christmas Eve where you get down to step six and  
16 it says now don't complete steps one through five  
17 until you've done six. (Laughter)

18 DR. GANDY: So put the recommendation --  
19 your warning ahead?

20 DR. JENKINS: Yeah, your last statement  
21 at the bottom should be the one at the top.

22 DR. GANDY: Yeah. Right up there.

1 Yeah. Okay. I'm tracking with you, Don.

2 DR. DICKEY: Dr. Bullock.

3 SPEAKER: It won't cut any femoral  
4 artery.

5 DR. DICKEY: Dr. Bullock.

6 DR. BULLOCK: I enjoyed your  
7 presentation but I just want to emphasize, you  
8 know, Dr. Jenkins' point there about the head  
9 injuries because it's not just a theoretical  
10 concern about head injury. There are a number of  
11 animal studies to show that the NMDA agonist  
12 effect synergizes with and creates much more brain  
13 damage. And that could possibly also have  
14 relevance for patients with cerebral vascular  
15 injuries, you know, somebody who had a carotid  
16 dissection, maybe that would be a good group. So,  
17 you know, I think that would be an important thing  
18 to put that in capitals and bring it up to the top  
19 there.

20 DR. GANDY: And I was just a little  
21 confused because I read some papers where they're  
22 using it as an induction agent during craniectomy

1 and a few people that said they weren't really  
2 concerned about it because they thought most of  
3 its effects were through increased cerebral blood  
4 flow. So, I mean, there was some contradictory  
5 information there but I elected to leave it in  
6 there as a "let's just don't do that."

7 DR. BULLOCK: Right. I think most  
8 people who have used it in surgery for craniectomy  
9 make the point that it's okay as long as you're  
10 having the patient on controlled ventilation and  
11 you lower that PACO<sub>2</sub> down to very low levels. But  
12 probably not good in this context.

13 DR. GANDY: All right. We'll move it  
14 up.

15 DR. DICKEY: Dr. Higginbotham.

16 DR. HIGGINBOTHAM: Thank you for your  
17 presentation. In using my ophthalmological lens and  
18 considering the occult nature of some of the eye  
19 injuries that may occur in the theater, certainly  
20 I think it would be on the conservative side to  
21 recommend any suspected eye injury because you  
22 ordinarily would not find an ophthalmologist in

1 the field. And the effects of ketamine on an open  
2 globe can be devastating. And certainly just  
3 putting a fox shield on the eye and just ensuring  
4 that the person gets an eye exam before ketamine  
5 is actually administered is important to  
6 highlight.

7 DR. DICKEY: Good comments. Any other  
8 questions or comments for Dr. Gandy?

9 Thank you very much for an interesting  
10 presentation.

11 DR. GANDY: I'll leave now.

12 DR. DICKEY: And we will -- no, we won't  
13 let you leave now. Sorry. That's -- and I should  
14 have done my homework because I'm likely to  
15 butcher this next name. Our next briefing is  
16 going to be given by Lieutenant Colonel Steven  
17 Cersovsky. Or is it a hard C, Cersovsky?

18 LIEUTENANT COLONEL CERSOVSKY: It's  
19 actually Cersovsky.

20 DR. DICKEY: All right. Close. The  
21 Lieutenant Colonel currently serves -- I'm not  
22 going to try a second time -- as the director of

1 epidemiology and disease surveillance at the U.S.  
2 Army Public Health Command. He's led numerous  
3 communicable disease outbreak investigations  
4 across the Department of Defense and has authored  
5 more than a dozen peer-reviewed articles and  
6 technical reports. Additionally, he has recently  
7 founded the Uniformed Services Academy of Preventive  
8 Medicine, a component society of the American  
9 College of Preventive Medicine. He's going to  
10 present an informational brief regarding rabies.  
11 Board members may find his slides under tab 7 of  
12 your meeting binders.

13 Lieutenant, I'm sorry, Colonel.

14 LIEUTENANT COLONEL CERSOVSKY: Thank  
15 you, ma'am. Thanks for the invitation to present  
16 to this group on what is in some ways a very  
17 classic public health response. But to a very  
18 interesting and rare disease, certainly in humans  
19 and unfortunately, prompted by a death of a  
20 Service member that occurred in August from a bite  
21 that was sustained.

22 So I'd like to cover between now and, I

1       guess, lunch, since I'm in the way of lunch, a  
2       brief synopsis of the index case that launched the  
3       response. A quick refresher on rabies since it's  
4       not a disease that we see in humans very much in  
5       this country, although it contributes to somewhere  
6       upwards of 55,000 deaths worldwide.

7                I'll describe briefly our ConOps or  
8       concept of operations going into this public  
9       health response, of which it is broken into  
10      phases. And I will talk about some of the major  
11      actions in each of the phases. The progress we've  
12      made to date, we're still in the midst of this.  
13      It started around Labor Day. Some preliminary  
14      data, very preliminary data, we haven't had much  
15      time to do a lot of data analysis since we've been  
16      primarily engaged in contacting individuals.  
17      There have been some policy responses through  
18      Health Affairs. Dr. Craig Postlewaite has been  
19      instrumental in this area and just some brief  
20      steps in our way ahead.

21               So back at the end of August we had a  
22      24-year-old specialist, Specialist Kevin Shumaker,

1 who was assigned to Afghanistan from May 2010 to  
2 May 2011. He was a cook with the 615th Military  
3 Police Company. He was also an avid dog lover and  
4 had adopted several dogs while downrange,  
5 stationed at a fairly remote forward operating  
6 base. Actually, several over the course of his  
7 deployment. Had some exposures to dogs over that  
8 time, some rather benign exposures or perceived to  
9 be benign exposures and some actual bites,  
10 sustained both from the animals that he was caring  
11 for, as well as some feral animals that had come  
12 into the AO and would engage in fights with his  
13 animals.

14           It is believed that he sustained the  
15 bite around January of this year. It was probably  
16 the one that was responsible for his infection.  
17 In May, he redeployed to Grafenwoehr, Germany,  
18 where his unit was located. He was doing fine.  
19 Then it came time to PCS in August. He was PCSing  
20 to Fort Drum. And en route, on the aircraft, he  
21 became symptomatic. And like most cases of rabies  
22 it started as a very non-specific flu-like

1 illness. He did develop some localized pain and  
2 numbness and tingling in the extremity. He was  
3 bit on his right hand. He was seen outside of  
4 Fort Drum. He hadn't been processed yet, was  
5 staying at a bed and breakfast. Was seen a couple  
6 of times in the ER for his non-specific symptoms.  
7 Eventually, he developed kind of a classic signs  
8 of hydrophobia, at which time a retired military  
9 physician in the ER made a presumptive diagnosis  
10 of rabies, ordered the testing, transferred him to  
11 the intensive care unit at Upstate Medical Center  
12 in Syracuse where he also happened to be cared for  
13 by some retired military docs in the ICU there.  
14 And clinical tests confirmed, in fact, that he had  
15 rabies. He was placed into a medically induced  
16 coma. He was on ketamine interestingly enough.  
17 And was placed on the Milwaukie protocol, which,  
18 if you will remember, was the protocol developed  
19 and used in Wisconsin that led to the survival of  
20 the young female from a bat bite or bat exposure.

21 As I mentioned before, his diagnosis was  
22 confirmed. Unfortunately, he had to be placed on

1 ECMO over the course of his illness, which was  
2 something unusual and novel for treatment of  
3 rabies. Developed an intracranial hemorrhage and  
4 passed away on August 31st of this year.  
5 Initially, a case contact investigation was  
6 launched. Although there's never been a  
7 documented case of human-to-human transmission of  
8 rabies, there's obviously theoretical risk that  
9 the virus could be excreted in the saliva of a  
10 human just as it is in saliva of animals, and  
11 anyone who may have had close contact with him in  
12 the form of sharing body fluids or sharing saliva  
13 could potentially become infected.

14           So the contact investigation targeted  
15 his unit back in Germany. It was found, of  
16 course, as he was PCSing to Fort Drum there had  
17 been the usual celebrations and the sharing of  
18 drinks and cigars and so forth. That was  
19 potential contacts. There were also health care  
20 workers that were exposed. There were some good  
21 Samaritans who responded when he had episodes of  
22 nausea and vomiting early in his symptom onset.

1 And so ultimately, 24 individuals were identified  
2 and placed on post-exposure prophylaxis.

3 This contact investigation involved  
4 Public Health Commands in Europe, which took  
5 the lead for the Germany piece. There were two  
6 international flights involved, so of course CDC  
7 got involved and their quarantine service. The  
8 New York State Department of health, the local  
9 county Department of Health, lots of agencies  
10 involved in the case contact investigation.  
11 During that case contact investigation, it was  
12 determined or discovered that members of his unit  
13 had also reported animal contacts for which they  
14 had not sought care. And so this started to  
15 develop some concern about what other exposures  
16 may have taken place downrange and that there may  
17 be other individuals who could have potentially  
18 been exposed to rabid animals as well. And I'll  
19 talk more about that in just a minute.

20 Just a quick refresher on rabies. It is  
21 a virus. It's a Lyssavirus that only infects  
22 mammals, primarily larger mammals. Although it

1 can infect all, most of the smaller mammals don't  
2 live long enough to transmit it. It's not viable  
3 outside the host so it's a fairly weak virus in  
4 the environment. Although in this country we  
5 worry about bats and wildlife, worldwide dogs are  
6 by far the number one carrier and that tends to be  
7 part of the educational challenge when we deploy  
8 troops. We're used to having a very safe pet  
9 population in this country and yet downrange where  
10 there are feral dogs and cats and so forth running  
11 around there's a fairly good chance that a lot of  
12 them will carry rabies.

13 In humans, the incubation period is  
14 typically one to three months. There are rare  
15 cases that occur a year after the bite. In this  
16 case, if we believe his exposure was in January,  
17 that puts his incubation period at about seven  
18 months, which is outside that kind of normal frame  
19 which becomes important in a minute. There have  
20 been cases, I believe, the longest case that's  
21 been documented in the U.S. Was a six-year  
22 incubation period reported by CDC. So it is

1 possible.

2 Communicability is up to 10-14 days  
3 prior to clinical signs and symptoms, so going  
4 back to the contact investigation. That's where  
5 we drew the boundaries on potential contacts to be  
6 prophylaxed. The only documented person-to-person  
7 transmission cases have been an Oregon transplant  
8 case, of course, which was not in play here.

9 Diagnosis is usually by a biopsy,  
10 usually a nuchal biopsy, back of the neck. You  
11 can also find antibodies in blood but that's  
12 usually late and then you can isolate the virus  
13 from the CSF. And death usually occurs by cardiac  
14 insufficiency and multi-organ failure. The most  
15 important thing about rabies for us, of course, is  
16 that it's preventable, the keys being, obviously,  
17 seeking medical care, proper wound care, cleaning  
18 of the wound, and then, of course, receiving  
19 vaccine and immunoglobulin if you've not been  
20 previously vaccinated.

21 So the concept of operations for the  
22 response was, again, when we noticed that there

1 were other soldiers in the units who had potential  
2 exposures who either did not seek care or sought  
3 care and had inadequate treatment, the Army  
4 Surgeon General certainly got concerned. And over  
5 the Labor Day weekend we had a series of  
6 teleconferences deciding how we were going to  
7 approach this. Ultimately, we found in his  
8 company 10 members who were placed on  
9 post-exposure prophylaxis who had exposure  
10 significant enough to warrant post-exposure  
11 prophylaxis. So that's 10 out of the military  
12 police company of a few hundred.

13 I'll just mention that there are some  
14 actually concluded now investigations that took  
15 place, one in theater in Afghanistan. The 15-6  
16 investigation was completed in mid- October. U.S.  
17 Forces Command has one that's wrapping up and that  
18 was designed to look at care that took place in  
19 Germany and Fort Drum. And then Northern Regional  
20 Medical Command did a QA review looking at care  
21 that was delivered right at Fort Drum. And that's  
22 also been concluded.

1                   So the Army Surgeon General directed a  
2 broader public health response to conduct both  
3 active case finding and passive case finding to  
4 determine if other Service members had been  
5 exposed, to notify them, to evaluate them, and if  
6 necessary, to treat them. Now, he drew the  
7 timeline going back 18 months to March 1, 2010. A  
8 lot of people ask why did we do that? If the  
9 normal incubation period is only one to three  
10 months, although I mentioned that if we believe  
11 the exposure of our service member who died, he  
12 essentially had a seven months incubation period.  
13 If you talk to CDC -- and we did and have many  
14 times -- the kind of gestalt was, well, maybe 12  
15 months would be a reasonable time. You're not  
16 going to catch everybody because I mentioned there  
17 are some with several year incubation periods but  
18 from a public health perspective at some point  
19 you've got to weigh, you know, the risk of missing  
20 some folk with the resources it would take to go  
21 back that far and the likelihood you would find  
22 anyone. So the Surgeon General said, well, if CDC

1 says 12 months, then let's put a little buffer in  
2 there and let's go back 18 months. So we have.

3 We're approaching this from a phased  
4 execution. I mentioned the active and passive  
5 case finding. We think of it in terms of phase  
6 one being that case contact investigation which  
7 was completed initially and identified those 24  
8 individuals. Phase two, which is kind of the  
9 active case findings. So those individuals for  
10 which we can find data indicating they may have  
11 had an animal exposure primarily from the  
12 Post-Deployment Health Assessment to  
13 Post-Deployment Health Reassessments. And then  
14 phase three, which is the folks we were most  
15 concerned about frankly, which are those who had  
16 unreported or undocumented exposures and that's,  
17 of course, what we call passive case finding that  
18 requires a broad outreach to try to communicate to  
19 those individuals the need to come in and seek  
20 care.

21 So I mentioned phase one already. Phase  
22 two, both the Post-Deployment Health Assessment

1 and the Health Reassessment have questions related  
2 to animal bites. They're not explicit. They tend  
3 to be kind of part of a checklist of potential  
4 exposures. They also tend to be as we've found  
5 interpreted to include everything from the  
6 concerning exposure to the dog to insect bites.  
7 And so it's kind of broadly interpreted by service  
8 members. So we used those.

9 We also queried the Theater Medical Data  
10 Store. This, of course, is the system -- the  
11 electronic system that documents care in theater.  
12 MODs, Task Force Afghanistan and U.S. Forces Iraq  
13 all did queries for us of those databases as well  
14 as others they had locally. We developed provider  
15 training packets. Essentially, they were  
16 guidelines that explained the situation and  
17 explained the need to do the evaluation. It  
18 included an evaluation of treatment algorithm, how  
19 to code. It included a questionnaire to assess  
20 risk. All that. And those are provided actually  
21 on our website. We shared those with the VA as  
22 well, who did a parallel outreach and have been

1 disseminating those packets. We created AHLTA and  
2 MC4 templates to help guide providers. And then  
3 we had to make a large central purchase of rabies  
4 immune globulin and vaccine. Normally, again, we  
5 don't see a lot of this stateside and so a lot of  
6 pharmacies don't stock that much. In this case,  
7 trying to kind of make an educated guess from our  
8 early efforts, we made a centralized purchase  
9 through the Defense Logistics Agency for all  
10 Services for 800 doses, each of RIG of the 1 cc and  
11 10 cc vials and then we ended up getting somewhere  
12 around 3,700 doses of vaccine to augment the  
13 stocks already at the pharmacies and the MTFs.

14           And then we had a big piece to  
15 coordinate access to care. We had individuals, of  
16 course, who had retired who had ETSed, guardsmen  
17 and reservists who had returned to civilian life  
18 and so had to work to establish eligibility and  
19 provide support and access to care for them. We  
20 also have worked very closely with the VA on  
21 making VA facilities available to all the Service  
22 members and they have initiated in tandem with us

1 an outreach program through the veterans' channels  
2 to reach these individuals to have them come in  
3 and seek care.

4 With regard to that outreach, we've  
5 developed a series of posters which Public Health  
6 Command is very good at doing. And actually,  
7 these ended up getting some of the most traction in  
8 the blogosphere. They tend to, someone said, go  
9 viral, which I think is kind of a bad joke but  
10 that's what they do. And there have been lots of  
11 comments on the way they kind of -- they grab the  
12 Service members' attention and they convey the  
13 idea. We've been engaged in print, radio, and  
14 television interviews to try to get the word out.  
15 We've utilized the Wounded Soldier and Family  
16 Hotline for all Services. When we send out  
17 letters, if we can't contact folks through  
18 telephone and e-mail, we provide the hotline phone  
19 number in the letter and we see upticks in its  
20 use. The hotline is -- the first time we've used  
21 it it's been a tremendous resource. We provide  
22 them with a script, with a questionnaire that

1 guides them through assessing the soldier, the  
2 Service member, and then they e-mail that to us to  
3 a generic e-mail address and we make follow-up  
4 contact to provide definitive care.

5 FORSCOM initiated an order to do 100  
6 percent accountability within all FORSCOM units to  
7 assess Service members or soldiers in this case  
8 for potential exposures and we targeted all the  
9 soldier readiness processing sites so as the  
10 soldiers redeployed, animal bites were actually  
11 specifically asked about and followed up on. We  
12 produced numerous fact sheets, updated medical  
13 print briefings, provided lots of material on our  
14 website for use by providers and units.

15 So this just gives you a snapshot as to  
16 where we are now. This is about a week old. This  
17 is basically just a very simple table broken into  
18 phases. The rows with the phases. Gives you some  
19 idea of the numbers we're talking about. In phase  
20 two, 8,500 individuals that we're tracking down.  
21 Phase three is that kind of passive case finding  
22 and we're right around 200 individuals who have

1 self-identified. And as you can see, the  
2 majority, even within phase two now, are cleared.  
3 We're finding that a lot of those can be cleared  
4 because the exposure was not significant. So  
5 again, it was either insect bites or it wasn't a  
6 mammal. We've had some very interesting stories  
7 but things that can be cleared without much  
8 treatment.

9           Now, the yellow is undergoing evaluation  
10 or treatment. So those are individuals who are  
11 receiving post-exposure prophylaxis. Of course,  
12 once they complete that they move into the green  
13 category so those aren't cumulative totals. And  
14 then we have a category for administratively  
15 closed. And these are individuals that we either  
16 can't reach or by the time we send out letters and  
17 so forth we either get the letter returned to us  
18 with a bad address and we can't find a good  
19 address through DMDC or other data sources and so  
20 they become kind of lost to follow up and then we  
21 have to rely on phase three outreach to contact  
22 them.

1                   So right now we're, again, phase one is  
2 complete. Phase two. Phase three is almost  
3 complete unless other individuals present. Phase  
4 two, we're about two-thirds of the way done.  
5 You'll see in the next slide, and the numbers are  
6 probably small, but this gives you some idea of  
7 the breakdown by service and other groups. So the  
8 Army has about 6,000 of those individuals. Again,  
9 this is just phase two, which represents about 70  
10 percent of the population. Of that number, about  
11 60 percent are Active Duty. And if you look at  
12 that last line at the bottom, the percent complete  
13 by column you'll find that right now the most  
14 difficult chunk is the Guard and Reserve, so  
15 hovering around 35, 40 percent. Active Duty is  
16 getting close to complete. You'll also see  
17 there's Air Force, Navy, Marine Corps, Coast Guard  
18 had a few individuals. Civilians and contactors,  
19 we had six NATO soldiers. We've had some local  
20 nationals, 15 detainees, all of which turned out  
21 to having been bitten by military working dogs  
22 which are vaccinated. And then we have some

1 categories for others and unknown. There have  
2 been a couple FBI agents and Department of State  
3 individuals.

4 Just some quick preliminary data. This  
5 just shows you based on the Post-Deployment Health  
6 Assessment and Reassessment records who's  
7 basically reporting bites or animal contacts.  
8 It's kind of reflective of the deployed force and  
9 what you would expect. It's your lower to  
10 mid-enlisted. Among officers it tends to be the  
11 lieutenants and captains, 02s and 03s in the Army.  
12 If you look by species, again, we were concerned  
13 downrange mostly with dogs, some with cats. This  
14 is just looking at a subset of those soldiers who  
15 have been cleared, 3,400. I mentioned a majority,  
16 the vast majority had no rabies exposure. Either  
17 they had no contact and just misreported or they  
18 had insect bites or rodent bites which we're not  
19 concerned with.

20 Of those that did have exposure we're  
21 concerned with, a small group had military working  
22 dog bites. Again, those are considered to be

1 safe. The majority were feral dogs. And then  
2 you'll see some cats and then some others  
3 sprinkled in there.

4 One area of big concern are the monkey  
5 bites because, of course, they carry the risk of  
6 simeon herpes B as well. They tend to be a  
7 favored mascot of some special forces' soldiers.  
8 And so that's when we've had to reach out to them.

9 So post-exposure management. This just  
10 gives you some idea of the numbers we're talking  
11 who are requiring post- exposure prophylaxis. So  
12 about five percent of the population we've  
13 contacted are requiring treatment in the form of  
14 rabies immunoglobulin and four or five doses of  
15 vaccine. Of those, of the 254 service members we  
16 looked at just quickly, 209 had their  
17 post-exposure prophylaxis initiated upon  
18 redeployment. So this tells you that a lot of  
19 them are not seeking care and being evaluated  
20 downrange. So there's a big educational piece  
21 that we're undertaking to get them to do so.

22 And then this talks about the other

1 post-exposure management. Sometimes we were able  
2 to observe the animal. Sometimes the animal can  
3 be captured and euthanized and the head sent to  
4 Vet Lab Europe, where it can be examined for  
5 rabies. We're finding that of those specimens  
6 submitted from Afghanistan, approximately 10  
7 percent are positive for rabies.

8 Policy responses. Health Affairs fairly  
9 early on established the Army as the lead service  
10 and so we've worked with our other service points  
11 of contact to conduct this outreach. They put out  
12 DoD-wide guidance in the form of memorandums from  
13 Dr. Woodson reminding individuals, providers, how  
14 to evaluate and treat. Re-emphasized pre-  
15 exposure prophylaxis policy. There's also been  
16 emphasis by Central Command on Rabies Advisory  
17 Committees, so certainly back on CONUS or when we  
18 were in Garrison we had Rabies Advisory Boards  
19 that seemed to be made up of preventive medicine  
20 physicians, veterinarians, IB docs, whomever, who  
21 evaluate the cases post facto and make sure that  
22 the proper care was delivered. Try to do

1 something similar in theater and that's been  
2 working. Health Affairs also provided some  
3 comments on one of the STANAGs, 2559, for rabies  
4 post-exposure prophylaxis. And we are undergoing  
5 a revision to the Post- Deployment Health  
6 Assessment and Health Reassessments to have a  
7 specific question that asks about animal bite  
8 exposures.

9           So at this point we're just continuing  
10 to conclude hopefully shortly phases two and  
11 three. Again, that's the outreach to try to  
12 contact anyone who has been exposed and provide  
13 proper care. We'll then move into -- and we've  
14 already started this -- kind of an after action  
15 review looking at a DOTMLPF approach to animal  
16 bite management downrange. We're looking to  
17 automate the animal bite report. That's a DD form  
18 that's used by both providers and by veterinaries,  
19 and incorporating that into reportable medical  
20 event systems. There's some draft white papers in  
21 the works looking at rabies management and  
22 deployed settings, kind of trying to think outside

1 the box. Maybe there are some other ways we could  
2 approach the feral animal population while  
3 downrange instead of just issuing a general order  
4 and telling folks not to do it, which doesn't seem  
5 to work that well or vaccinating the entire force.  
6 Perhaps there are ways to actually vaccinate  
7 animal populations and control those that are in  
8 and around our operating bases.

9           And then we've been working, as I  
10 mentioned, closely with CDC. We're getting ready  
11 to embark with them on some research protocols.  
12 One area in the current guidelines that is without  
13 much of a scientific base but is included because  
14 it's just kind of the conservative thing to do is  
15 the need for a fifth dose post-exposure if you're  
16 on anti-malarials. Well, of course, most of our  
17 folk downrange are on malaria pills and there's  
18 little evidence to support that other than a few  
19 studies looking at individuals on chloroquine.  
20 And so we're looking at -- working with CDC on a  
21 project using, I believe, Fort Bragg. We'll look  
22 at the actual antibody levels associated with

1 providing rabies vaccine to individuals on various  
2 anti-malaria medications.

3 And there's another one of our  
4 (inaudible). There's also a series of posters on  
5 (inaudible).

6 Okay? So that's all I had. I  
7 appreciate the time and the opportunity.

8 COURT REPORTER: Last thing for the  
9 record, I'm sorry, the last thing you said into  
10 the record.

11 DR. DICKEY: There's also a series of  
12 posters that have cats.

13 LIEUTENANT COLONEL CERSOVSKY: Oh,  
14 right. Yes. We also have a series of posters  
15 targeting the kittens.

16 DR. DICKEY: Just in case somebody out  
17 there likes felines instead of canines. Right?  
18 Dr. Jenkins.

19 DR. JENKINS: I'd just like to  
20 congratulate Colonel Cersovsky and his group of  
21 folks. Obviously, in a very short amount of time  
22 covered a lot of ground. High penetrance, great

1 agility on the part of the Army to have the  
2 response that they've had here. It gives me hope  
3 that other endeavors that will affect even more  
4 lives we can accomplish the same. Well done.

5 DR. DICKEY: Thank you very much.

6 DR. GANDY: I was just going to say I  
7 remember when I was in residency in Texas and we  
8 had a rabies problem and they were airdropping  
9 some sort of pellets -- I don't know if you all  
10 had talked about doing that -- that had rabies  
11 vaccines in them for the feral animals. But just  
12 a thought.

13 LIEUTENANT COLONEL CERSOVSKY: It's  
14 actually been very effective in this country for  
15 wildlife. They use a lot for raccoons and foxes.  
16 That's something that we've considered, too. I  
17 think downrange if we could do that around some of  
18 our FOBs. That's part of what's going into some  
19 of these white papers is some thoughts about  
20 efforts we could use downrange to target the  
21 animal population.

22 The problem now is if you use things

1     like kinetic means, in other words, you kill the  
2     animals, other packs of dogs will just move into  
3     that void. So you're not eliminating the problem,  
4     you're just substituting it for a new one. And so  
5     if you could actually control the disease within  
6     your population there around your base, not only  
7     would it protect the soldiers but it would also  
8     reduce rabies rates in the local national  
9     population. That, of course, has strategic  
10    implications, medical diplomacy, all of that. So.

11                 DR. DICKEY: Other comments or questions  
12    for Colonel Cersovsky?

13                 DR. BULLOCK: Just one point. How  
14    effective is the pre-exposure vaccine? Is that  
15    100 percent effective at eliminating rabies?

16                 LIEUTENANT COLONEL CERSOVSKY: Well, of  
17    course, nothing is 100 percent. But it's very  
18    effective and it's safe. It's a three dose series  
19    but it doesn't eliminate the need for treatment  
20    post-exposure. So you still require two doses  
21    post-exposure. What it does is reduce the number  
22    of post-exposure vaccine doses and removes the

1 requirement for rabies immunoglobulin. So you  
2 still require treatment.

3           That's something that was considered  
4 very early on. Should we look at force-wide  
5 pre-deployment pre-exposure prophylaxis? I think  
6 it's something we will still consider but we've  
7 got to remember a couple of things I guess. One,  
8 that the Army Surgeon General pointed out which  
9 is, of course, quite obvious, I guess. This is  
10 our first case in a human since 1967, since  
11 Vietnam. And so whereas the relative risk is  
12 certainly higher downrange compared to Iowa, for  
13 instance, the absolute risk is still very, very  
14 small. So if we were to embark on some large  
15 scale pre-exposure prophylaxis policy we'd have to  
16 take into account the cost both in dollars but  
17 also in terms of adverse effects from the vaccine.  
18 We would potentially see, you know, and all the  
19 logistics would go with that.

20           Rabies vaccine, I don't know exactly  
21 what the current inventory is from the  
22 manufacturers but that's something we'd also have

1 to look at. It's one of those things that supply  
2 tends to wax and wane a bit, too. I know there  
3 was some concern when we embarked on this effort  
4 if we would deplete some supplies of RIG or  
5 vaccine it would be needed for more acute  
6 exposures. And when DLA went to the manufacturers  
7 they assured us that we would be okay but they're  
8 not willing to share their manufacturing capacity  
9 or their inventory stock levels. I guess it's a  
10 guarded secret. So it's been somewhat difficult.  
11 But that's something that would just be another  
12 fact we'd have to consider.

13 DR. DICKEY: Dr. Higginbotham.

14 DR. HIGGINBOTHAM: Thank you for your  
15 presentation. I think we've all seen stories of  
16 Servicemen that adopt animals and bring them home.  
17 To what extent can you actually change that policy  
18 or activity? Because I just wonder to what extent  
19 the exposure is even greater than what we realize.  
20 And I'm just fearful that we may be  
21 underestimating what's going on.

22 LIEUTENANT COLONEL CERSOVSKY: Yes,

1 ma'am. There are many, many organizations out  
2 there now, you probably see them in the papers,  
3 who advertise and seek financial support to help  
4 Service members bring their adopted pets home.  
5 There are actually at least two congressmen who  
6 have endorsed that practice. I don't know if  
7 there's an easy answer to that. We were kind of  
8 walking that fine line. We don't want to make it  
9 look like we're necessarily declaring war on  
10 animals, so there are some sensitivities there.  
11 But we recognize that as an issue. I don't know  
12 how we're going to address it or at what level but  
13 it's definitely something.

14 I think, you know, you can control what  
15 you can control and so if we can make policy  
16 within our own organization and we can educate and  
17 train Service members and providers, that might be  
18 the easier route than to try to take these groups  
19 on publicly.

20 DR. DICKEY: Other comments or  
21 questions? It's remarkable the issues that are  
22 raised when we go spend long periods of time in a

1 country, isn't it?

2 Thank you very much for an interesting  
3 presentation, Colonel. And we will continue to  
4 watch and see what recommendations come forward on  
5 that.

6 I believe that has concluded the  
7 morning's program. We are now going to break for  
8 a working lunch in the Potomac Room. That lunch  
9 includes Board members, Federal Agency Liaisons,  
10 Service Liaison Officers, DHB staff, distinguished  
11 guests and speakers. And I believe Ms. Bader had  
12 outlined a number of opportunities for those who  
13 are not invited to the lunch. We will resume here  
14 at 1:00 to take back the program.

15 (Recess)

16 DR. DICKEY: If we can call the group  
17 back to order please. Welcome back. Hopefully  
18 all of you enjoyed your lunch. We want to welcome  
19 the Honorable Secretary Togo West with us this  
20 afternoon. I'm sure the briefings this afternoon,  
21 Secretary, will be of great interest and I'm  
22 delighted to have you join us.

1                   This afternoon we're going to start our  
2 presentations with Captain Hibbeln. Dr. Carmona,  
3 would you like to make the introduction?

4                   DR. CARMONA: Certainly, Dr. Dickey.  
5 Joe Hibbeln is an extraordinary thought leader at  
6 the U.S. Public Health Service. He's a captain  
7 and has run metabolic research for many, many  
8 years up there. He is one of the leaders as I  
9 said internationally in the field of nutritional  
10 metabolism and the work he's doing came to my  
11 attention a number of years ago when I was still  
12 Surgeon General. But more recently I was asked to  
13 convene and be part of a meeting of all the  
14 Services and thought leaders in the world around  
15 the concepts of nutrition for the warrior. And  
16 Joe called me and said -- this was about two years  
17 ago -- he said we'd like you to give the keynote  
18 and frame these issues. And the name of the  
19 conference is Nutritional Armor for the Warrior,  
20 which really resonated with me. But when you see  
21 the science that he has been working both for the  
22 prevention side and how omega-3, omega-6 levels

1 relate to ultimately inflammatory processes, how  
2 they can work in prevention and equally important  
3 now some of the data that's emerging as far as  
4 therapeutic value for some of these nutritional  
5 elements, we thought it would be important for Joe  
6 to come before us and share his research with us  
7 so that the Defense Health Board can proactively  
8 be involved in determining how much we should move  
9 forward on this, how aggressively as it will  
10 benefit our warriors.

11 So we're fortunate to have Dr. Hibbeln  
12 with us today. Joe, thank you for being with us  
13 and your willingness to share the information that  
14 will ultimately help our warriors.

15 DR. HIBBELN: Dr. Carmona, Dr. Chairman,  
16 it is a privilege and an honor to fulfill my duty  
17 to give you this informational brief on omega-3  
18 fatty acids.

19 The NIH director indicates that I should  
20 say that this presentation does not represent any  
21 policy or position of the U.S. Federal Government.  
22 It is only my scientific opinion. That being said, I would

1     like to introduce the order of my talk as  
2     presented by the former director of the NIH,  
3     Bernadine Healy in describing back in 2008 the  
4     important emergency and recognition of omega-3  
5     fatty acids, that no nutrient is more important  
6     for decreasing cardiovascular death than omega-3s.  
7     And we have failed to take seriously the  
8     significant nutritional fat deficiency that  
9     afflicts most Americans. We have two little  
10    omega-3s, the kind found from oily fish.

11             The deficiency significantly increases  
12    the risk of heart attack and sudden cardiac death,  
13    but mounting evidence suggests that omega-3  
14    storages contribute to problems as disparate as  
15    premature birth, neurological disorders, mental  
16    disorders, autoimmune disease, obesity, and  
17    certain cancers. This is no fish story. Raising  
18    omega-3s could be as important to public health as  
19    lowering cholesterol. Then she goes on to the  
20    next paragraph and says, "That's right. You heard  
21    me. This is more important than cholesterol.  
22    Wake up." I'm not going to describe so much about

1 the vascular system but I'll describe about  
2 neurological disorders and mental health and some  
3 of the rest of these.

4 The best introduction is to show you  
5 worldwide the impact of these nutrients on levels  
6 of risk of disease. Here are data from 63  
7 different countries. The omega-3s eaten in those  
8 countries and here the risk of death before the  
9 age of 75 years old if you're a man. If you're  
10 sufficient, it's about 1,000 per 100,000.  
11 Deficient, your risk of death is doubled. For  
12 women to die before the age of 75 it's almost  
13 triple the risk in low fish consumption for all  
14 causes of death. So if you don't want to die  
15 before the age of 75 you might pay attention.

16 Here is stroke mortality. We'll discuss  
17 that some more. That's the heart. Here are some  
18 indicators of brain risk and function.  
19 Deficiencies in omega-3 fatty acids and increased  
20 risks of homicide, bipolar or manic-depressive  
21 illness, major depression, postpartum. That's the  
22 big epidemiological overview.

1                   Here's the bottom line for the heart.  
2           The American Heart Association recommends eating  
3           fish two to three times a week or one gram a day  
4           of omega-3 fatty acids. Why? Because after four  
5           decades of work and 90,000 basic science  
6           publications, we know that the omega-3 fatty acids  
7           prevent the development of atherosclerotic  
8           plaques. They prevent the plaques from bursting  
9           and prevent the clotting and choking off of the  
10          vessel after that has burst. And it stops that  
11          from happening.

12                   Now, our friend here is not dead yet.  
13          His heart has been choked off from its blood  
14          supply but what kills him is the arrhythmia that  
15          follows that. We know the specific biophysical  
16          mechanisms for omega-3 fatty acids in the heart  
17          stopping the calcium flow and potassium flow and  
18          eliminating the arrhythmia completely. Old guys  
19          in Japan don't die of arrhythmias after they have  
20          a heart attack.

21                   Here is also an organ very close to me,  
22          not close to my heart but three feet above, the

1 brain. And an illustration in an animal model of  
2 middle cerebral artery ischemia where the artery  
3 is choked off. So here you can see that the brain  
4 is largely dead after 30 minutes of ischemia. And  
5 here are those same animals given intravenous DHA,  
6 which is selectively concentrated in the brain,  
7 preventing necrosis up to five hours after the  
8 middle cerebral artery. You can see that there's  
9 a difference between this one untreated and this  
10 section treated. And the infarct sizes are  
11 perhaps 50 percent less and we now know some of  
12 the specific molecular mechanisms of DHA  
13 preventing the neural cascade of apoptosis and  
14 edema. And there is emerging work that omega-3  
15 fatty acids may not only protect the brain from  
16 ischemic injury but from traumatic injury. And  
17 the animal data is coming up very well that there  
18 is going to be a significant role in treatment or  
19 depression. So you might be able to decide  
20 whether you want your brain to look like this  
21 after a traumatic event or whether you want your  
22 brain or your soldiers' brains to look like that.

1           Now, you may ask if there's a danger in  
2           surgeries or traumatic incidence to giving omega-3  
3           fatty acids. And exactly the opposite is true.  
4           Here are surgical recommendations from the Society  
5           of Critical Care Medicine in Aspen indicating that  
6           for the most severe patients, immune enhancing  
7           formulas, including omega-3 fatty acids, should be  
8           given for major elective surgeries, trauma,  
9           abdominal index scores greater than 20, burns  
10          greater than 30 percent, and critically ill  
11          patients on a ventilator. And the level of  
12          science behind the recommendations are grade A. A  
13          lot of this has to do with quieting down the lung  
14          inflammation after intubation or injury so lungs  
15          don't fill up with water because they've been  
16          provoked by intubation, et cetera.

17                 So now that I may have gotten your  
18                 attention, a little bit on how omega-3 fatty acids  
19                 may be useful, we'll get down to the granularity  
20                 of the biochemistry and the whole picture of this  
21                 thing. So, for at least 250 million years of the  
22                 development of nervous systems, the diets that

1 nervous systems ate were rich in n-3 or omega-3  
2 fatty acids. In contrast with the latter half of  
3 the 20th century where the main dietary source of  
4 fat is seed oils. This is the parent omega-3  
5 fatty acid. That's the parent omega-6 fatty acid.  
6 We can't make these precursors and we cannot make  
7 these products. All of these fatty acids, all of  
8 these polyunsaturates must be consumed in the  
9 diet. We don't grow our own. We've got to import  
10 them from our diet. So what you eat, what foods  
11 you choose for lunch and dinner become your heart,  
12 become your immune system, and become your brain.

13 I didn't make it up that these are  
14 marine oils, and we can get into jokes about  
15 oiling marines and, you know, all that sort of  
16 stuff, but they are highly concentrated in the  
17 marine food supply. These are the long chain or  
18 highly unsaturated omega-3s. This is what comes  
19 into the diet and this is what membranes look  
20 like. If you're eating an antique diet, an  
21 ancient diet and evolution, your diets are full of  
22 blue omega-3s and modern diets full of red

1       omega-6s. When the cell gets stimulated, and this  
2       is just one of the inflammatory mechanisms through  
3       the COX enzymes, if the derivatives are omega-3  
4       fatty acids you get a nice burst of inflammatory  
5       response that quiets down like it should. If you  
6       instead overload the system with omega-6s, you get  
7       a prolonged, severe concentrated inflammatory  
8       response that perpetuates cytokine storms in the  
9       lungs that impairs wound healing and causes  
10       excessive thrombosis, headache, and pain. I saw  
11       Tylenol being used here. Well, that knocks out  
12       the COX enzymes.

13                 Other critical derivatives with this  
14       overloaded omega-6 is now also the recognition of  
15       marijuana-like molecules that are really derived  
16       from diet, flooding our brains with marijuana-like  
17       molecules that like marijuana impairs satiety.  
18       And there are increasing implications in substance  
19       use and suicide risk. I won't discuss substance  
20       use today.

21                 Here's the evidence that the U.S. food  
22       supply and the U.S. military supply has been

1 flooded with omega-6 fatty acids. These are data  
2 from 1909-1999, indicating the disappearance of  
3 227 different foods over time. You can see right  
4 here after World War II when Wesson figured out  
5 how to squeeze oils and troops came back wanting  
6 beef, we grew the soybeans and grew the corn to  
7 feed the beef, to feed the returning soldiers. We  
8 then had oils squeezed out which are high calorie,  
9 easy to transport. They started to flood the food  
10 supply. So soybean oil, which did not exist  
11 virtually in the human food supply in the U.S. in  
12 1900 now makes up 20 percent of all calories.  
13 Sanjay Gupta didn't believe me so he went off in  
14 the grocery store and he got embarrassed by  
15 looking at the different foods that are available.

16           So how might we apply this to issues and  
17 concerns in a military setting? This slide was  
18 given to me by the Health Promotion Risk Reduction  
19 Task Force indicating Army population here and  
20 suicides there. And indicating that if you want  
21 to prevent suicides, you prevent the impulsive,  
22 high-risk behaviors that precede suicides --

1 prescription drug use, criminal offenses, alcohol  
2 use, other things. They discuss here what health  
3 maintenance -- and you discuss what health  
4 maintenance issues should be addressed to the  
5 whole population. Well, I will comment that it's  
6 not too much of going out on a limb to follow the  
7 scientific and governmental advisories of more  
8 than 30 international and scientific bodies that  
9 indicate that omega-3 fatty acids should be  
10 increased in the food supply. This is based --  
11 and even the USDA in 2010, they used some of my  
12 data and helped to make these guidelines for  
13 cardiovascular, stroke, immunological and surgical  
14 survival issues. This is based on 90,000 basic  
15 science publications, 9,000 human study  
16 publications, and about 2,000 human clinical  
17 trials.

18           So, for those endpoints. Now, how about  
19 for the brain? Will omega-3 polyunsaturates also  
20 reduce high risk behavior -- major depression,  
21 substance abuse, violence, and suicidal behavior?  
22 That's still a question mark. I'm going to alert

1 you to some of those data.

2           Now, why should they? I described to  
3 you or at least I failed to describe to you that  
4 that omega-3 fatty acid, that DHA, that marine  
5 oil, that is selectively concentrated in neuronal  
6 membranes. It makes up synapse. If you want to  
7 build a new synapse, it's like building a new  
8 house. You've got to order concrete in. If you  
9 don't have DHA you can't build a new synapse. And  
10 here are animal neurons with adequate DHA or  
11 deficient DHA. There's the cell body. There's  
12 the sprouting arms and those little red dots are  
13 all the synapses.

14           Now, if you're going to remember in  
15 process any of the information from today, you're  
16 growing new synapses and this fundamental unit of  
17 the nervous system is rearranging itself. Here's  
18 a neuron without DHA. Fewer arms, fewer  
19 connections, 50 percent fewer synapses. How many  
20 synapses do you want your soldiers to go into  
21 battle with? Twice as many synapses or half as  
22 many synapses? That's your choice.

1                   So what about omega-3s and high risk  
2 behaviors? What do we know when we look at the  
3 data? Well, I've been looking at omega-3 fatty  
4 acids in depression for 20 years now. I  
5 originated the field. There's now 54 different  
6 epidemiological and ecological trials. Case  
7 controlled trials, about 16. Randomized placebo  
8 control trials, 34; meta-analyses, 5. My read of  
9 the literature is that, yes, these unequivocally  
10 show a positive benefit compared to placebo and  
11 the effect size is similar to pharmacologically  
12 used anti-depressants currently.

13                   For ADHD, 6 epidemiological trials; 10  
14 controlled trials, 1 meta-analysis which indicates  
15 that yes, it's effective. However, it is not as  
16 good as psychostimulants. Aggression and  
17 violence we'll talk a little bit about. I'll just  
18 show you this trial and the reduction of 35  
19 percent felony violence. Anxiety, there's a  
20 little bit of emerging data. Alcohol and  
21 substance abuse, a bit of emerging data, and suicide a  
22 bit of emerging data. So I labeled them as

1 hopeful as opposed to yes.

2           So here's an indication of a trial done  
3 in children with severe depression. Ten in each  
4 group. In four weeks and six weeks time we see a  
5 significant reduction in depressive scores in  
6 children using omega-3s compared to placebo. This  
7 also indicates if it's safe enough for kids, it's  
8 safe enough for the rest of us. But here's a  
9 meta-analysis that we've conducted looking at  
10 omega-3 fatty acid trials and this ridiculously  
11 complex slide shows a red line here of equal  
12 value. On the right it favors placebo. Very few  
13 do. When we have -- using EPA and DHA together we  
14 have a clinical effective size about 0.5, which is  
15 similar to anti-depressants.

16           Here's the meta-analysis of trails on  
17 ADHD. And here again is equal in this chart,  
18 favoring omega-3s are on the right. The author  
19 indicated that they are effective for reducing  
20 ADHD. Moderate effect size and low heterogeneity  
21 among the trials.

22           What about anger and violence? Well, as

1 Aristotle said, "Anybody can become angry. That's  
2 easy. But to be angry with the right person to  
3 the right degree at the right time and for the  
4 right purpose and in the right way, that is not  
5 within everyone's power. And that is not easy."  
6 Describe selective use of force and impulsivity.  
7 You would like to have soldiers that are  
8 aggressive but thoughtful, who are not impulsive  
9 and violent, who have good cortical control. We  
10 know from studies in suicide and impulsivity and  
11 violence that the core regulator of that control  
12 is the serotonergic nervous system in the frontal  
13 or executive cortex. And if your serotonin is  
14 active and well, you can repress and regulate and  
15 modulate your limbic system.

16           So low serotonergic function is a common  
17 mechanism for high impulsive disorders. And here  
18 is a representative of the animal trials  
19 indicating that piglets given omega-3 fatty acids  
20 for 18 days of life double the levels of serotonin  
21 in their frontal cortex and double their dopamine  
22 -- I'm saying that for Pete Delaney who recognizes

1 the importance of dopamine in addictive disorders  
2 -- and their metabolites.

3           Here is a population of people who  
4 cannot regulate their violence and impulsivity  
5 well. Young, impulsive, violent offenders in a  
6 British prison cited by evidence-based medicine  
7 and evidenced-based mental health because of its  
8 statistical rigor. Baseline assessments for nine  
9 months of their aggression and violence. Compared  
10 to baseline there was a 37 percent reduction in  
11 new convictions for felony level violent offenses.  
12 New convictions for felony level violence offenses  
13 in the prison. And no difference in placebo.  
14 This has now been replicated by three different  
15 trials. But because it's a U.K. trial, you know,  
16 it doesn't -- it won't work here in the U.S.  
17 Right? We're too different.

18           So let's talk a little bit about another  
19 impulsive and deregulated behavior of concern to  
20 military populations which would be suicide. So  
21 right off the bat before we go any further I want  
22 to tell you that we only have one double blind

1 randomized placebo controlled trial of omega-3  
2 fatty acids and suicidal behavior. And we did  
3 this in Ireland on 49 subjects recruited from a  
4 Dublin emergency room given Japanese levels of  
5 omega-3 fatty acids for 12 weeks and who saw no  
6 other therapy. We saw a 50 percent reduction in  
7 depressive symptoms, 45 percent reduction in  
8 suicidal thinking, 33 percent reduction in stress,  
9 and a 30 percent improvement in happiness. I  
10 know. I'd like to have, you know, funds to  
11 replicate a moral pill. That would be cool.

12           So what about U.S. military populations?  
13 This was a study funded by DARPA. We looked at as  
14 many U.S. active military suicide deaths as we  
15 could collect from 2002-2008. Eight hundred  
16 military deaths. Eight hundred controls matched  
17 by age, gender, rank, etcetera, from the serum  
18 repository. I put them through my tri-through put  
19 GC robotic analysis which we developed in our lab.  
20 We confirmed that they were suicides and collected  
21 these data. This study was done for about  
22 \$40,000.

1           The first thing we noticed right off the  
2 bat is the U.S. military population represented by  
3 the 1,600 people has frightfully low levels of  
4 omega-3 fatty acids. Here for comparison is a  
5 population I work with in England of English  
6 7-year-olds and you can see that only the bottom  
7 tail of the 7-year-olds are the mean of the  
8 omega-3 fatty acid levels for U.S. personnel.  
9 Arguably, recommendations are over here. In this  
10 study, from the highest octile of omega-3 fatty  
11 acid levels from the blood in the U.S. military,  
12 we see about a 75-percent increased risk of suicide death.  
14 And that's in a very low, narrow range of levels.  
15 For comparison, we tried to extrapolate as best we  
16 could to other world populations.

17           So here's a population of Chinese  
18 people. Four hundred subjects, suicide risk or  
19 not. This is the bottom quartile of the Chinese  
20 population and they -- the bottom quartile was  
21 higher than the top of the U.S. population, so  
22 much so that they didn't -- almost didn't overlap.

1 And here, increasing blood levels from omega-3s  
2 from 0.7 to 7 further decreased risk of suicide by  
3 about an odds ratio of 5. So if we compare to  
4 where we could be in the world to the lowest  
5 levels now, it may be a five- to six-fold  
6 difference in risk of suicide.

7 So these issues came forth in this  
8 conference that Dr. Carmona so kindly described on  
9 Nutritional Armor for the War Fighter. Dominant  
10 themes that emerged from that conference were the  
11 following. This is an obligation I have to you  
12 from the omega-3 scientists at that conference.  
13 They said, "Joe, if you ever get the chance, you  
14 tell them, immediately educate senior military  
15 personnel on the omega-3 heart benefits. And Joe,  
16 we want you to do that because this is key man or  
17 key woman, Dr. Chairman, insurance. We want, as  
18 scientists, U.S. scientists, to protect your  
19 hearts because by protecting your hearts, we're  
20 protecting your brains. And by protecting your  
21 brains, you best protect us. So it's a very  
22 selfish dictum to you."

1           So, in addition, we should conduct large  
2 suicide prevention and mental health care outcome  
3 studies in applicable military populations. We  
4 should consider doing the following. It's not  
5 change the diet or do the research. Figure out a  
6 way to do it both at the same time. It takes a  
7 long time to implement dietary changes. Start  
8 down that road. We have enough data. We have  
9 90,000 publications in this area. You're not  
10 going to do any harm. Change the diet, do the  
11 research at the same time, and then trust but  
12 verify. That is, institute programs to measure  
13 omega-3 fatty acid blood levels.

14           So what will that do for you? Well,  
15 here's one description from a commercial lab. If  
16 you're at 70 percent optimal health, that's like  
17 an old guy in Japan or Iceland. Seventy percent  
18 omega-3s, 30 percent omega-6s. Now, maybe you  
19 don't want to go for optimal. Maybe you want to  
20 go for a Mediterranean level. That's still pretty  
21 healthy. Whoops. Where did we go? That's still  
22 pretty healthy. About 50/50. You don't want to

1 be down here and take urgent remedial action. You  
2 don't want to be down there. That would be bad  
3 for you. Guess what? That's where everybody is  
4 in the U.S. Military, except about 2, 3, 4, 5  
5 percent. Very low levels.

6 So, how can we increase omega-3 highly  
7 unsaturated fatty acid levels? Several different  
8 strategies of approach and Steve Montain was there  
9 and others to really help problem solve how this  
10 might be done. Well, you could supplement with  
11 capsules. That's one way. That's easy. Just buy  
12 capsules and deliver them and, well, we'll see who  
13 actually takes them and we'll see if we can  
14 convince them that if, you know, similarly to  
15 before you go to the gym you take your supplements  
16 to rip your body. Get it tough. You take the  
17 omega-3 supplements to rip your brain. Get it  
18 tough. Who knows? I'm not good at this. Public  
19 Health Command is better at advertising than I am.

20 Fresh seafood is hard. Omega-3 enriched  
21 products are expensive. We're developing a  
22 concept of stealth health and that is to create

1 super chickens, super eggs, and super pork, that  
2 those foods have high omega-3 and low omega-6  
3 levels so that the chicken you ate for lunch  
4 without any difference of taste could have  
5 delivered you a gram of omega-3 fatty acids  
6 without you knowing it.

7           So we have a super chicken project  
8 developed in collaboration with the NIH, the  
9 Samueli Institute, the U.S. Army Natick, Wenger  
10 Feeds that produces feeds for most of the chickens  
11 in the mid-Atlantic region and Pioneer Plinish  
12 that has a different soybean oil.

13           And I'm not going to show you all those  
14 data. They're in your handout. But this is one  
15 example of what we've done right off the bat and  
16 that is to make healthy pork sausage. Now, that  
17 would be a contribution, wouldn't it? Right? So  
18 it's got 200 mgs here. I'm sorry, 20 mgs in  
19 standard sausage and nearly 110 mgs, about a  
20 fivefold increase in the omega-3 fatty acids by  
21 tinkering with the diets of what we feed the  
22 chickens and the pork and eggs to deliver brain

1       nutrients through the food supply. And to do this  
2       economically. To do this at low cost efficiency.

3               So then we're going to take these diets.  
4       Scientists always like to say about what they're  
5       going to do. And we're going to use -- we're  
6       going to see -- we're going to take seven days  
7       with the current DoD mean garrison menu and use  
8       exactly the same menus and swap out all the foods  
9       and all the nutrients. So the food looks the  
10      same. The current DoD diet with standard chicken,  
11      eggs, and pork, high omega-6 soybean oils and a  
12      placebo smoothie. Then we're just going to swap  
13      the foods and then we're just going to go for  
14      broke, swap the foods, add instead of a supplement  
15      in a capsule, add a box of smoothie, and then give  
16      enriched mayonnaise, chocolate, pasta sauce. Use  
17      a 12-week dietary intervention in the metabolic  
18      kitchen, middle-aged population. We're going to  
19      see if we can do it. We're going to see if people  
20      will eat it. We're going to see if we can change  
21      their blood levels and change their stressor  
22      activity to an immune provocation and change their

1       mental and mood functioning.

2                   The health promotion, risk production,  
3       suicide prevention campaign contacted me to  
4       address some of these issues and begin to discuss  
5       it and they kindly allowed me to present their  
6       slide of their forward action in this area to you  
7       recognizing that the Army recognizes that a  
8       healthy, balanced diet should include nutrients  
9       such as vitamin D and omega-3s, important for  
10      promoting health. They're addressing this through  
11      a three pronged holistic approach to educate, to  
12      provide nutrition, provide appealing foods, and to  
13      do more research, and to the behavioral health  
14      aspects. And I would like to see these critical  
15      mental health research gaps filled. I would like  
16      to see a large prospective trial on the prevention  
17      of severe suicidal episodes. The trial of 49  
18      subjects suggests that this is feasible and  
19      possible. I want to give whopping doses to combat  
20      the omega-6s, 4 grams a day of omega-3s compared  
21      to a placebo. I want to see a really big trial  
22      done in treatment-resistant major depression. I

1 want to see if we can prevent combat stress  
2 induced PTSD. I want to make Seals and Rangers eat fish  
3 before and after their training. When we  
4 put them through training, see if we can, you  
5 know, increase the graduation rate from 40 percent  
6 to 60 percent by restoring their critical brain  
7 nutrition. And I'd love to see a trial done in  
8 military families to see if we can prevent the  
9 stresses and distress of the families upon return.

10 So I'd just like to acknowledge my  
11 collaborators and thank you very much for your  
12 attention.

13 DR. DICKEY: Thank you very much,  
14 Captain Hibbeln. Fascinating, particularly since  
15 there wasn't any fish at lunch out here. We'll  
16 fix that in the future. But I'm sure that the  
17 oils on those salads were omega-3 rich.

18 Are there comments or questions? Dr.  
19 Carmona.

20 DR. CARMONA: Thank you, Nancy. Joe,  
21 thanks very much for this insightful and I think  
22 long overdue presentation. I wanted to just

1       recount an issue to my colleagues. Back in '06  
2       you'll remember when I was still on Active Duty  
3       and Surgeon General, I received a call that on one  
4       of the Indian reservations -- we had  
5       responsibility for the Indian Health Service --  
6       there was an epidemic of suicides in adolescents.  
7       And I went out there in Northern Minnesota in one  
8       of the most desolate areas you've ever seen and we  
9       had had about a dozen adolescent suicides within  
10      about a year's time. I don't know the exact time  
11      but pretty close. And off the charts as it  
12      relates to what you'd expect compared to a normal  
13      U.S. adolescent population. And, of course, when  
14      I arrived and I was briefed by staff and I looked  
15      at the reservation I thought, well, I get it.  
16      There's nothing here. It's so desolate. And I  
17      remember calling back and saying I think I fixed  
18      it. You know, I think I figured this out. It's  
19      more about the social determinants of health.  
20      That is there is nothing here. There's no food.  
21      There's no access. There's no recreation. The  
22      suicide rates are high but so are high school

1 dropout rates, divorce rates, lots of single moms,  
2 obesity is rampant. On and on.

3           And it was Joe Hibbeln who said to me,  
4 "Sir, that's only part of the problem." He's the  
5 one that alerted me to it and said, "If you look  
6 at the history of this tribe, they were displaced  
7 from an area that was further north where they got  
8 all their protein just two generations ago from  
9 cold water salmon. And every one of them had high  
10 omega-3 levels. And as we traced this population  
11 we found that not only did the mortality go up  
12 from suicide, but the depression rate became  
13 astronomical and was directly correlated with  
14 nutrition or lack of nutrition in this case. And  
15 that's what really opened my eyes to it and his  
16 whole career has been dedicated to this. But I  
17 think that the scientific information is now  
18 overwhelming and compelling enough that we should  
19 carefully consider how we might want to move  
20 forward that would benefit our troops and their  
21 families as Joe has pointed out. Thank you.

22           DR. DICKEY: Thank you, Dr. Carmona.

1 There's some pretty compelling evidence here.

2 Comments or questions? So, Captain,  
3 you've laid out three or four research gaps.  
4 What's preventing you from proceeding down the  
5 path of filling those gaps?

6 DR. HIBBELN: MRMC, in particular Carl  
7 Castro, has reached out to us and invited us to  
8 submit those critical research proposals. They're  
9 in consideration. They're in the works. We want  
10 to make sure that they're done to the highest  
11 quality. We want to make sure that they're done  
12 in an unequivocal manner with the best scientists.  
13 It's just an issue of time. It hasn't happened  
14 yet because suicide prevention trials are very  
15 expensive to conduct and they must be conducted  
16 well. And it is the paper showing the low levels  
17 of omega-3 fatty acids and increased risk in  
18 military suicide and a reporter from USA Today  
19 that put some spark to the issue.

20 DR. DICKEY: Great. Other questions for  
21 Dr. Hibbeln? Thank you very much. And please be  
22 sure and continue to keep us updated as you gather

1 information.

2 DR. HIBBELN: Thank you.

3 DR. DICKEY: I want to welcome Secretary  
4 Woodson-- Doctor, we're delighted to have you with us and  
5 hope that you can stay to chair the afternoon. I  
6 appreciate your input. Any comments for the group  
7 before we move on with briefings? Keep going.  
8 All right.

9 Our next briefer is -- but you do notice  
10 that when the Secretary got here suddenly the  
11 temperature in the room became bearable.

12 (Laughter) The immense power, sir, of you just  
13 coming in. It's appreciated by all of us. We  
14 thought global warming was not really happening.

15 Our next briefer is Dr. Scott Montain.  
16 Dr. Montain serves as Deputy Chief of the Military  
17 Nutrition Division. Maybe we should have had all  
18 of these before lunch, Ms. Bader. I'm not sure  
19 it's fair to serve us tiramisu and then talk about  
20 nutrition after lunch.

21 Dr. Montain serves as the Deputy Chief  
22 of the Military Nutrition Division at the U.S.

1 Army Research Institute of Environmental Medicine  
2 in Natick, Massachusetts. All right. I don't  
3 think we have one of those in Texas. He also  
4 serves as a research physiologist and principal  
5 investigator. His research includes the broad  
6 study of nutritional and environmental factors  
7 influencing human exercise performance. Aspects  
8 of his work include the study of fluid needs,  
9 thermoregulatory and nutritional demands of  
10 military operations, physiological modeling, and  
11 interventions for improving soldier resilience to  
12 operational stress. Dr. Montain is going to  
13 provide an informational brief regarding DoD  
14 nutritional research activities and for the board  
15 members the slides are under tab 9.

16 Dr. Montain, welcome. We're looking  
17 forward to your presentation.

18 DR. MONTAIN: Thank you very much for  
19 the introduction. Can you hear me? All right.

20 As was said, I'm going to give you a  
21 brief of what the Military Nutrition Division or  
22 what the DoD is doing with the nutrition dollars

1 that it dedicates into the nutrition field. Hold  
2 on a second.

3           Before I begin that brief though I have  
4 a couple of things I need to point out. One is  
5 I'm going to focus on what the Army is doing with  
6 the dollars it programs to do nutrition research.  
7 As you can probably all guess, being that you're  
8 clinicians, a lot of people see nutrition as a  
9 tool that can be used to study a certain problem  
10 or to correct things.

11           So while I'm going to try to give you  
12 the research that's being done in the DoD, I think  
13 you can start off under the premise that it's  
14 probably not complete because I'm just not aware  
15 of what some people are doing outside that program  
16 dollar realm. The other thing is I'm going to  
17 give you a brief of what's going on in the DoD in  
18 terms of nutrition. It can become like a laundry  
19 list and I don't want to put anyone to sleep so  
20 I'll try to keep a good pace and I'll try to  
21 deliver it in a way that you'll enjoy and learn  
22 from. All right?

1           So I divided the talk into four topic  
2 areas. I'm going to first go over who the players  
3 are in nutrition research within the Department of  
4 Defense. Kind of a who's who and how they fund  
5 that research. I'll then talk about three arms of  
6 research. I'll spend most of the time on  
7 nutritional physiology research because I believe  
8 that's probably where the committee wants to  
9 gather the information to see how it complements  
10 what you just heard. But I'll also spend some  
11 time with the Ration Sustainment Program. That's  
12 the continuous ration improvement-type efforts.  
13 And also work that's been going on in terms of  
14 dietary supplements and nutritional supplements.

15           So who is who in nutrition research?  
16 Well, one thing to know is that nutrition is kind  
17 of seen as purple- suited, but the person who is  
18 the primary executor of dollars dedicated to  
19 nutrition, that comes through the Army. And  
20 there's two primary players. In terms of ration  
21 and building rations, the person that does that is  
22 the combat feeding directorate, which is part of

1 the Natick Research Development Engineering  
2 Command or NSRDEC, which is part of Army Material  
3 Command. Okay? So if you're thinking about who  
4 builds the rations, individual rations that a  
5 soldier is going to consume when they're away from  
6 a cafeteria or when they're using like unitized  
7 group rations that they heat and serve, that's  
8 combat feeding directorate. And their primary --  
9 what they're primarily doing with their research  
10 dollars is looking at how do I make something that  
11 people will consume, package it in a way that it  
12 stays the way they want it to be over some period  
13 of time, and so it has that necessary  
14 preservatives inside there, but also being able to  
15 withstand the shelf stability requirements that  
16 different rations have to have. For example, a  
17 Meals Ready to Eat has to last five years. So  
18 that adds some real complexity in terms of the  
19 food technology side. So that's primarily what  
20 they're doing with the research dollars is working  
21 on food technologies.

22 When you're thinking about what is the

1       nutrients -- what are our nutrient requirements  
2       and how are they working inside of us, that  
3       nutritional physiology, the primary player there  
4       is the group that I work for which is the  
5       nutrition division which is part of the institute  
6       I work at, the U.S. Army Research Institute of  
7       Environmental Medicine, a big mouthful. So many  
8       of you may know us under the acronym, which is  
9       USARIEM. And we are, as I'll show you, we are a  
10      laboratory that's part of the Army's medical --  
11      MRMC. Okay? So we are the primary person that's  
12      executing research dollars in terms of nutritional  
13      physiology.

14                 Now, we are not the only ones inside the  
15      Army who do nutrition research but we're the two  
16      primary players. The Uniformed Services University,  
17      particularly Dr. Patty Doyster, she's a real  
18      interesting nutritionist. So she'll gather grant  
19      money through different sources and she'll do  
20      research in nutrition as well. They've also set  
21      up an organization called CHAMPS. And CHAMPS' real  
22      mission is to gather information and act as a

1 clearinghouse of that information, and  
2 particularly information related to nutrition.

3 So you can see that as a research arm as  
4 well, not so much in terms of biochemistry but in  
5 terms of gathering information, filtering through  
6 it, and then providing a tool for disseminating  
7 that information.

8 The Special Operations Command also has  
9 research dollars and periodically that question or  
10 has an interest area that has to do with nutrition. So  
11 they will also periodically go off and do a  
12 nutrition project. All right?

13 Now, the way the other way that the DoD  
14 funds nutrition is through broad agency  
15 announcements. And if you could read the pamphlet  
16 or the slide, there are really four players. The  
17 Navy, primarily through their Code 30 research arm  
18 will do some nutrition projects. Historically,  
19 that would be what Roy Stripling used to head up  
20 but I believe Roy is out now so probably the point  
21 of contact there now is Kelly Rossi. I don't know  
22 who took over Roy's position. They're primarily

1 in that arm of the Navy research, they're  
2 interested in the nutritional needs or the  
3 research needs of the Marines. Okay? In a  
4 preventive arm sort of way. So you can guess if  
5 you're thinking about prevention and helping  
6 Marines work optimally you can back around to,  
7 there might be a place for nutrition. So that's  
8 where they'll get into the nutrition arm. It's  
9 not their primary thing they're working on.

10 The Air Force also has a bit of research  
11 money that goes into nutrition. Not real  
12 consistently but it's for their special operators.  
13 So that same group that's going to have high  
14 energy requirements. Are we feeding them the best  
15 we can? Excuse me.

16 DARPA, in their life sciences research  
17 arm does some nutrition work. You heard Dr.  
18 Hibbeln mention that they had received some  
19 funding for their omega-3 suicide work. They've  
20 also done some work with some different dietary  
21 supplements over the last few years. For knowing  
22 what they're exactly up to right now the point of

1 contact would be Chris Macedonia.

2 In terms of the last one is the  
3 organization that's above me. USARIEM is  
4 underneath the Military Operational Medicine and  
5 Research Program or MOM. They also do broad  
6 agency announcements where the money will go  
7 either to DoD labs other than ours or to different  
8 university-type environments.

9 So the last place that you might see  
10 nutrition research being funded doesn't actually  
11 come through dollars that come into the Department  
12 of Defense. It actually comes through  
13 congressional special interest money. One good  
14 example that you sometimes see in the newspaper is  
15 the University of Pittsburgh has received quite a  
16 bit of money to work with the 101st Airborne. And  
17 part of that money that they received as that  
18 congressional special interest has gone into  
19 defining the nutritional requirements of the  
20 nutritional status of the 101st and then they're  
21 now involved in some intervention studies to try  
22 to help them eat healthier because one of the

1 observations is they eat very poorly in terms of  
2 nutritional quality and they're trying to come up  
3 with some ways in improving that.

4 Another player that gets congressional  
5 special interest money who has been very valuable  
6 to nutrition research for the DoD is Pennington  
7 Biomedical Research Center. For those of you who  
8 aren't familiar, they are one of the international  
9 leaders in the study of obesity. And that  
10 congressional special interest money that they  
11 get, they provide to the DoD free biochemistry and  
12 staff support for nutrition-related research  
13 projects. So when our research team wants to go  
14 and do a field study, Pennington will bring  
15 people to help support us in terms of staff and  
16 whenever we collect blood samples that we need to  
17 have analyzed, they will do that for free. This  
18 -- when you hear bad things about congressional  
19 special interests, this is the exact opposite.  
20 This is a real win-win for the DoD because we get  
21 a lot of service for no money. When this went  
22 away, the congressional special interest became

1 unpopular and said we're not going to do them  
2 anymore. That suddenly put on DoD in the  
3 neighborhood of like \$2 million that they had to  
4 make up and pay them if we're not going to lose  
5 that service. That gives you some idea of good  
6 value. We were getting like \$2 million worth of  
7 work for free.

8 Now, I said that USARIEM is the primary  
9 player in nutritional physiology. And the reason  
10 that we are there is that when they gave this  
11 function of nutritional research to the Army they  
12 did it because we were going to work under the  
13 Office of the Surgeon General. So the Office of  
14 the Surgeon General delegates that responsibility  
15 down to MRMC and then they delegate that down to  
16 us as we're a component of MRMC.

17 Now, where is USARIEM? As was  
18 mentioned, we're in Natick, Massachusetts, which  
19 is about 16 miles directly west of Boston. And  
20 this is the campus. We're a part of the Soldier  
21 System Center and you can see the USARIEM logo on  
22 the building on the left hand side. Now,

1 co-existing with us is the Combat Feeding  
2 Directorate. And so if you remember, that's the  
3 people who make the food. So co-existing on the  
4 same campus we have the nutritional physiology arm  
5 and we have the people who build the food. So we  
6 have a very nice synergy and complement, which is  
7 why we're co-located -- one of the reasons we're  
8 co-located together.

9 Now, USARIEM as a mission is preventive  
10 medicine. And we're divided into four groups.  
11 One group deals with environment. So heat, cold,  
12 altitude-type issues. Another one, if our soldier  
13 is going to wear this gear there's a biophysics  
14 issue of heat transfer. So we have a division  
15 that deals with the biophysical components. We  
16 also have the nutrition division, which I belong  
17 to. And then a military performance division.  
18 The performance division is interested in how can  
19 we keep people from getting musculoskeletal  
20 injuries.

21 Now, in terms of our mission, we have  
22 nine investigators, including the person who is

1 the division chief. We have six dietitians to get  
2 us the nutritional expertise. And we have  
3 assorted technicians. Now, one feature that we  
4 have in the nutrition division in terms of  
5 investigators is that we have quite a diverse group of  
6 people. As was mentioned, I'm not a dietitian. I  
7 am a physiologist by training but we do have  
8 dietitians, physiologists, neuroscientists. So we  
9 have quite a range of expertise.

10 Now, in terms of mission, we're a  
11 prevention group so we're viewing nutrition as  
12 what does it take to keep the nutritional status  
13 at a high level in soldiers regardless if they're  
14 on a mission, any stage of their lifecycle in  
15 terms of being in the service. Our main  
16 responsibility is to support the Army Surgeon  
17 General as they serve as the DoD's executive agent  
18 for nutritional status. So we try to provide in  
19 terms of our research guidance as to one sort of  
20 nutrient needs to be raised or lowered when we  
21 make recommendations for daily requirements.

22 In terms of capabilities, we do basic to

1 applied research. So that spans in terms of  
2 experimental models we do cell culture work to small  
3 animals, all the way up to human studies. In  
4 nutritional physiology it's all in the context of  
5 how do you optimize soldier performance in  
6 fitness. So you can think about it as a fueling  
7 as well as how do I keep your body matrix despite  
8 you're working in very harsh environments? We  
9 also get money to do ration sustainment and  
10 testing, and also some money to do dietary  
11 supplement-type work.

12 In terms of objectives, of our group,  
13 it's primarily two. One is, as listed here, is  
14 enhanced war fighter health and performance and  
15 resilience, using nutrition as our tool. The  
16 other, where we spend time, though, is on this  
17 idea of recovery. Because when soldiers go out on  
18 missions and they carry their own gear, they have  
19 high energy expenditures, but they typically  
20 under-eat relative to those needs. So they're  
21 relying on that recovery period between missions  
22 to actually refuel.

1           So part of our work is trying to study  
2 what happens to them when they're under-eating,  
3 and then how can we best help them to refuel so  
4 they can go back out on their next mission.

5           So with that as a background, what's  
6 going on in terms of nutritional physiology?

7           Historically, if you're going to build  
8 rations, you have to know what requirement you're  
9 building to. So, historically, a good deal of the  
10 research in this area had to do with what are the  
11 requirements we're building to?

12           We then moved into more of the  
13 carbohydrate, in terms of how much carbohydrate  
14 would you have to put in a ration in order to  
15 provide the fuel for getting people to exercise  
16 as hard as they need to for their missions.

17           More recently, the work has been on  
18 protein requirements. And in terms of how much  
19 protein should you really be putting into a  
20 ration. There's a dietary recommended intake  
21 that's about .8 grams per kilogram body weight.  
22 The question is, should soldiers get that? Is

1       that adequate, or should they have more in terms  
2       of their nutrition standards?

3                So in that realm, those who follow this  
4       area, and exercise, in terms of if you do  
5       resistance exercise what will happen is that  
6       there's a period of time after your exercise where  
7       your protein breakdown goes way up, and your  
8       ability to build protein is not very good. So  
9       you're actually in a catabolic state, where you're  
10      tearing yourself down. Then as you eat, you'll go  
11      into an anabolic state, where you'll build muscle.  
12      And providing protein during that period after  
13      exercise seems to have some benefit.

14               So one of the projects that we've done  
15      recently was to look at an endurance exercise and  
16      see if the same nutritional practice has a  
17      benefit. And the answer is yes, it does.

18               So that leads to the question of, if we  
19      provide the higher protein diets during periods  
20      where people are doing this under-feeding, would  
21      they benefit from having more protein?

22               And to do that, we're doing a

1 collaborative study with the USDA laboratory  
2 that's in Grand Forks, where people go in there  
3 and they live in this -- they have a dormitory  
4 environment there, where they can have people live  
5 for 30 days. And they're being divided into  
6 different groups. One group's being fed the  
7 regular RDA for protein, or the DRI for protein.  
8 One group's getting 1.5 -- instead of getting .8,  
9 they're getting 1.5 grams per kilogram, which is  
10 about what is recommended for endurance or really  
11 active people. And then another group is getting  
12 above and beyond that, to see where is the optimal  
13 level of protein.

14           Initially they're in weight-balance  
15 status, so it would be just like an exercise-type  
16 study you might find in the exercise literature.  
17 But for 21 days after that, they go into an  
18 energy- restricted state so that they're expending  
19 more calories a day than they're taking in, in  
20 terms of energy. But the amount of protein  
21 they're getting is varied.

22           And that will give us that answer of

1       whether there is some benefit to providing more  
2       protein in their diet when they're not eating  
3       enough to maintain their body mass.

4                 Alongside that human study there's also  
5       an animal study. Because there's some evidence  
6       that when you change the amount of protein you get  
7       in the diet, when you're energy restricted, it  
8       changes your bone architecture. So we're studying  
9       that in a rat model to see how changing the  
10      protein changes bone structure and bone  
11      properties.

12                So that's a background of what's going  
13      on in terms of macronutrients. In micronutrients  
14      we're had some projects over the last few years  
15      that deal with mineral nutrition.

16                One mineral that we've done several  
17      trials on has to do with iron. And you might say,  
18      well, we know a lot about anemia. Well, what was  
19      happening was that when women were coming into  
20      their initial training, that a number of them were  
21      breaking down as part of that training. And when  
22      you did blood chemistries on them, they were

1 becoming anemic as part of the basic training.

2           So the question was, if you provided  
3 them a supplement could you prevent that anemia?  
4 And would it have a functional consequence,  
5 allowing them to train?

6           And the answer to that is if you  
7 provided it as a pill, yes you could maintain them  
8 and prevent them from going into anemia, and it  
9 had a functional consequence, in terms of more of  
10 them were completing the course. But if you  
11 allowed them to not -- if we didn't hand them the  
12 pills, compliance went down quite a bit.

13           So then the question was how could we  
14 intervene here in an effective way that they would  
15 take the supplement that's provided? So the iron  
16 was put into like an energy bar as the strategy.  
17 And almost 100 percent compliance if it was  
18 provided as food. But, of course, when you  
19 provide iron in food, the bioavailability goes  
20 down. So now the question is, how can we enhance  
21 the bioavailability and provide the supplement?

22           So that gives you an idea of why that

1 was going on. The other mineral that was of  
2 interest is zinc, because it's involved in so many  
3 chemical reactions. And one of the reasons we're  
4 interested in it is it's one of the nutrients that  
5 if you're relying too much on the MRE, some of  
6 these individual field rations, it could become  
7 marginal in terms of your dietary status.

8           So the question is, what would happen to  
9 you if you became marginal? And so we did a  
10 series of animal studies where we didn't take zinc  
11 out of a diet but we just reduced so that you  
12 become in a marginal state. And so what were the  
13 consequence for growth, bone development,  
14 musculoskeletal function? And the answer was, it  
15 was dramatic enough to be a concern.

16           But zinc's also been shown to be very  
17 effective in terms of diarrhea treatment in  
18 children. So the question was, would it work in  
19 adults?

20           So a few years back we did a study in  
21 Kenya, because that happens to be a diarrhea  
22 capital of the world. And so we thought, well if

1 we provide zinc to them, that would be a way of  
2 studying whether marginal zinc status and zinc  
3 supplementation would be effective. So that was  
4 one study.

5 The answer there was kind of --  
6 unfortunately, we picked a bad year. They didn't  
7 have that many cases. So we couldn't really make  
8 a definitive conclusion -- other than the people  
9 who had co-morbidities who had received the zinc  
10 benefitted quite dramatically.

11 We've also done -- relevant to the  
12 issues today with brain -- we've done some work  
13 with zinc in terms of TBI -- in this case, TBI  
14 being from blunt head trauma, not from blast --  
15 hitting a small rodent in the head, and saying if  
16 you're zinc status was marginal to low, how would  
17 that affect your ability to tolerate getting hit  
18 in the head?

19 And the answer is, it does. The animals  
20 -- I'll show in another slide, so hold onto that  
21 thought.

22 We've also been doing work with sweating

1 and mineral losses. Because whenever you deal  
2 with nutritional requirements, there's always this  
3 question of how much is going out in your sweat?  
4 And so we've done a series of studies looking at  
5 how much is actually coming out.

6 The answer is that that's probably  
7 overstated, that concern is over -- people think  
8 too much that too much is coming out, rather than  
9 what actually is coming out. There's actually a  
10 tremendous amount of contamination in the samples  
11 that were collected in the historical literature.

12 One other area of nutritional physiology  
13 that I wanted to bring up before I switch is we've  
14 done some work with phytonutrients -- particularly  
15 how they would -- if people were to take them --  
16 well, like one example is -- you might be familiar  
17 with this -- curcumin. There's some thought that  
18 that can act positively towards your health. And  
19 we've been studying it in a cell-culture model to  
20 see where its toxicity levels are, and whether it  
21 might -- once we know that, then whether it might  
22 be protective when you're getting into

1 environmental insults.

2           But back to the zinc and head injury --  
3 so we did a study in conjunction with  
4 investigators at Florida State, where we hit  
5 animals in the head, and they either had adequate  
6 zinc, or they were marginally low in zinc, and  
7 then looked at how well they could cope with  
8 getting hit in the head.

9           And the animals that -- so here's the  
10 sham animals. And this is an elevated water maze.  
11 So this is a test of anxiety. So here's the  
12 normal score. These are the zinc-adequate animals  
13 who got hit in the head. So they didn't really  
14 have any change in that score. But if they were  
15 marginally deficient and then were hit in the  
16 head, they had a much greater anxiety when they  
17 were hit. So just having low zinc somehow  
18 affected their ability to tolerate just getting  
19 this mild hit in the head.

20           From that work, it's interesting -- the  
21 DoD has an interest in head injuries. And so  
22 we've continued to develop some brain-injury

1 models, and also to look at other strategies we  
2 might use in terms of nutritional interventions.

3 Dr. Hibbeln mentioned this idea of  
4 omega-3 fatty acids. But to do that, we actually  
5 hosted a panel, through the Institute of Medicine,  
6 to get their opinions on where we should best  
7 target our research into what nutrients would be  
8 the best sources. From that, there's actually a  
9 book that's available. And that book -- the  
10 information from that book will be used for  
11 different nutritional intervention studies.

12 We had done some work, or some work in  
13 the DoD has been done in probiotics, particularly  
14 for improving gut health, and then getting the  
15 passive immunity, the potential passive immunity  
16 that might come from that.

17 The initial work was to develop a  
18 shelf-stable form that we could put into  
19 operational rations, and then showing that it  
20 would colonize. At that point, we were ready to  
21 do some interventions and see if it actually had  
22 any impact. But around the same time, the FDA

1       decided that probiotics, if you were going to do  
2       research, would be treated like a drug, in the  
3       sense that you had to do everything under good  
4       manufacturing practice.

5                 Given our budget, we basically took a  
6       pause and said the financial requirements and  
7       personnel requirements to do that would be more  
8       than we could economically do. So that work has  
9       actually stopped at this point -- not that we  
10      won't pick it up, it's just that at that point in  
11      time we had to take a stop.

12                In terms of vitamin D, that's been in  
13      the public health -- it's been of interest in the  
14      public health realm because of the observation  
15      that a number of people in the United States and  
16      around the world have low vitamin D levels. When  
17      we were doing the iron work with the women, we  
18      were actually taking some of that blood and  
19      looking at what their vitamin D levels were. So  
20      we have a good idea, at least in that population  
21      of several hundred, what the incidence rate is.  
22      And it's quite large, where you might be

1 concerned.

2           We've also done some work with an  
3 epidemiology study, because one of the risk  
4 factors for your vitamin D status is how much UV  
5 you get exposed to. Because UV exposure is what  
6 helps you synthesize vitamin D if you're not  
7 getting it through your diet. So if that's the  
8 case, then you might guess that people that live  
9 in areas in the north, where UV light intensity  
10 would be lower -- and particularly if you're  
11 Black, and so you have a hard time synthesizing  
12 when UV intensity is not high -- that those people  
13 would have more risk of bone injuries if they have  
14 low vitamin D.

15           So we did an epidemiology study to see  
16 if there was any relationship between  
17 home-of-record -- which would be your light  
18 intensity -- and the incidence of stress fractures  
19 and frank fractures during initial military  
20 training. And we gathered the data from the Armed  
21 Services repository of data for 15 years -- so we  
22 have all the data from every person who joined the

1 military for 15 years -- and looked at what  
2 happened to them during their basic training  
3 period of time in terms of injuries.

4           The answer to that, if you want to know  
5 -- do you want to know? -- is that there's  
6 absolutely none. In fact, the people that came  
7 from the north, who had the lowest UV intensities,  
8 had lower incidence of stress fracture than the  
9 people that were in the highest solar loads, or in  
10 the moderate solar load conditions -- because we  
11 divided it into thirds. Which is completely  
12 contrary to what the people who developed these  
13 risk factors would predict.

14           And I can't give you the answer as to  
15 why. I have some ideas. But suffice it to say  
16 that we could not find that home-of- record is  
17 predictive of anything in terms of stress  
18 fractures.

19           Now the last one I wanted to talk about  
20 vitamin D is an ongoing project, or one that's  
21 about to begin. And this is actually a  
22 multi-service effort that has to do with vitamin

1 D. And it has to do with -- what they'll be doing  
2 is supplementing women, as they go through basic  
3 training, with vitamin D and calcium. And it's a  
4 follow-on to a project that was done, I guess it  
5 would be the Coast Guard or the Navy -- which one  
6 trains out of the Great Lakes? So the women who  
7 were going through that training for several years  
8 were followed. And they did a dietary  
9 intervention with that group, and they found that  
10 when they intervened with vitamin D and calcium  
11 that they were able to reduce the incidence of  
12 stress fractures.

13           So we're following that up to see if, in  
14 a larger population, if we can reproduce that  
15 observation. But along the way we're also looking  
16 at how it's affecting bone architecture, and also  
17 whether there's different phenotypes that would  
18 predict who's going to be sensitive to the vitamin  
19 D and the calcium. So who are your responders and  
20 who are your non-responders. And this is being  
21 done with players from the Air Force, Army, and  
22 then university investigators.

1                   So -- but what brought us here today was  
2 this idea of essential fatty acids. And you're  
3 probably already wondering if the DoD was doing  
4 any work to complement what Dr. Hibbeln was  
5 talking about.

6                   And the answer is, we actually hadn't  
7 done very much in the way of research other than  
8 what Dr. Hibbeln stated. So, in terms of our program  
9 dollars, we've been mostly observing what was  
10 going on, but not taking any active role.

11                   We, as part of the injuries that I  
12 talked about with using zinc, the plan was to do  
13 -- and still is -- is to do some intervention  
14 trials using essential fatty acids. So there is a  
15 plan to do some small-animal work using, instead  
16 of using a blunt-injury model, you actually use a  
17 blast model.

18                   We're also involved with Dr. Hibbeln  
19 directly with the super chicken study that he  
20 briefed you on. And we're involved in a couple  
21 ways. One is, we're the -- the Army is the  
22 primary funder for that project. So we're the

1 payer. The other way that we're involved is, if  
2 you're going to make that dietary intervention, it  
3 makes sense to ask, did it matter? Because you're  
4 going to switch them from where they are now to  
5 over here, hopefully. Then you should -- it  
6 doesn't make economic sense, if you've spent all  
7 this time to move them, why don't you test to see  
8 if it did anything functional?

9           So in that we have got some -- took  
10 advantage of some money that was available through  
11 -- the Army, the Materiel Command has an effort to  
12 lighten the load, because soldiers carry so much  
13 weight, and it causes musculoskeletal injuries.  
14 So we're leveraging some dollars that they had  
15 available to see if, when we change the diet in  
16 the super-chicken study, if it helps then tolerate  
17 and recover from a fatiguing load-carriage task so  
18 it has practical relevance to our population.

19           I told you this would get to be a  
20 laundry list, so I apologize.

21           In terms of another area of stress  
22 physiology has to do with a little different tack,

1 and that is resilience of cognitive function. And  
2 we have work ongoing with the different schools  
3 that provide SEER training, or the survival,  
4 evade, escape, where you become a prisoner of war,  
5 since that's very psychologically stressful.

6           And one of the projects that we're doing  
7 there is that we've had some ongoing efforts with  
8 a dietary supplement called tyrosine. And  
9 tyrosine acts as the precursor for catecholamines.  
10 So the idea is if you're under sustained stress,  
11 that you could get to the point where you can't  
12 make enough to maintain your norepinephrine and  
13 epinephrine levels. But if you could provide  
14 tyrosine, the person could continue to synthesize,  
15 and they could withstand stress.

16           And in small-animal models, it seems to  
17 work very well. In human trials, where we've done  
18 it in cold exposure it seems to work. And now  
19 we're applying it in the SEER environment to see  
20 if it provides an advantage for the soldiers to  
21 tolerate that psychological stress.

22           But then I want to leave that and talk

1 about something completely different. Because  
2 another area that the Department of Defense has  
3 spent time on is healthy eating. And they've done  
4 it in a couple different ways.

5 One is that you've got people that  
6 become overweight. And so if -- you're going to  
7 put them in these groups, or these classes where  
8 you're going to help them manage their weight.  
9 There's been dollars that have been spent to make  
10 sure that those programs work. Or are there  
11 better ways or tools you could use to help them  
12 lose weight so they can stay in the service?  
13 There's not much going on in that area today. But  
14 over the last years there had been.

15 Where the dollars are being spent today  
16 are in trying to -- many of you may have heard of  
17 the Soldier Fueling Initiative, or some of these  
18 other initiatives where they're trying to change  
19 the garrison dining facilities to make them more  
20 healthy eating environments, and try to change  
21 people's eating behaviors and to make them more  
22 healthy eaters.

1                   The other, where there's been dollars  
2 spent, has been in the better understanding of how  
3 your -- when you eat a meal, when your food is  
4 being digested, there's a number of hormones that  
5 get secreted as you digest that meal. And they  
6 have been thought to help provide feedback to your  
7 brain that, in terms of, you've eaten enough. So  
8 they're clues into fullness -- when you stop eating,  
9 but then also that feeling of sustained fullness  
10 that lasts between meals.

11                   So we've been studying what those  
12 hormones are doing in creating that environment.  
13 And if we manipulate them, how is that affecting  
14 eating behavior?

15                   And you might say, well, why do we care?  
16 Well, if you've got an overweight population, you  
17 would like to be able to find ways to help them so  
18 they wouldn't eat too much. But then you've got  
19 the population that we have that are infantry  
20 type, who are burning lots of calories and having  
21 a hard time eating enough when they're on their  
22 missions, but we want them to refuel between

1 missions. So if we can build foods that encourage  
2 or facilitate eating, then they would better  
3 refuel. Okay? So we have two kind of -- two  
4 interests there, populations of interest there.

5 So now I'll finish up by spending some  
6 time with what's going on in ration sustainment.  
7 So that's a little bit different. So it's not  
8 research to better understand nutritional  
9 requirements, but to build rations that people  
10 would want to consume.

11 One of the areas where dollars have been  
12 spent over the last five or so years was the  
13 development of a new ration. Historically, the  
14 Meal Ready to Eat was the standard ration during  
15 when soldiers were relying on individual field  
16 rations. But it's kind of big, kind of heavy.  
17 Not too easy to eat on the go. So it's not,  
18 probably, ideal for all -- certain population  
19 groups.

20 So together with the Combat Feeding  
21 Directorate, we thought about what could we do to  
22 make a ration that better works in an environment

1 where you struggle to eat enough, and don't want  
2 to carry so much food. And the first-strike  
3 ration is the answer to that. Because it's  
4 smaller, it's lighter, it's all eat-on-the-go type  
5 of concept.

6 We've also, in collaboration with Combat  
7 Feeding, have worked on different ways of novel  
8 delivery systems, so they can get food different  
9 ways. And one of the common products we know s  
10 very effective in the field environment is  
11 caffeine -- so different ways of delivering  
12 caffeine, or inserting them into the ration  
13 products.

14 Another area in ration sustainment has  
15 been that we provide food to the service members  
16 but, historically, when we do so, when they put  
17 the nutrient label that says how many calories, or  
18 what the vitamin content is, they're relying on a  
19 USDA data base. And some of those nutrients were  
20 actually, haven't been chemically analyzed for 20  
21 years.

22 You heard what Dr. Hibbeln said -- our

1 food supply has changed considerably. So the  
2 nutrient quality of some of the food components in  
3 their data base are in error.

4           So we've been spending money -- the DoD  
5 has been spending money -- in collaboration -- to  
6 kind of correct some of these issues. And so  
7 we've been chemically analyzing all the MRE food  
8 components, as well as the components in the  
9 first-strike ration, so that we have the actual  
10 chemical composition, and we can look at what  
11 happens as they sit through shelf-stability so we  
12 have an idea of what's actually happening to the  
13 ration over time.

14           Now, why does the Army care? Well, one  
15 is that you have accurate labeling. The other is  
16 that you can hold the contractors that we have  
17 that make the food, hold them to standard, so that  
18 we can actually see if they're complying with the  
19 contract that they're writing -- which they  
20 actually enjoy, because everything is accurate  
21 then. And I can't think what the third one is.  
22 So I'm going do a Rick Perry and say, oops.

1           And in terms of -- then the last thing  
2           that we do in ration sustainment, which is quite  
3           an effort that goes on annually, is there's a  
4           continuous ration improvement program. And as  
5           part of that, research dollars are spent in taking  
6           the rations out to the field and getting customer  
7           feedback as to whether this product or that is  
8           better than the old product, and the like.

9           Now, the last topic area I'll go, and  
10          then I'll finish up, is in terms of dietary  
11          supplements. And the Department of Health Affairs  
12          -- I think I have that right. Yeah -- Health  
13          Promotion, so DHP -- became interested in the idea  
14          of dietary supplements and thought it should be  
15          part of the component of research dollars.

16          So historically, when money would come  
17          down through MEDCOM into MRMC, then down to us,  
18          the idea would be that we would do some dietary  
19          supplement work. But that is actually very  
20          expensive, because everyone under the sun wants  
21          you to try their nutrient. And we did not want to  
22          become this clearinghouse of studying these

1 dietary supplements.

2 Well, with the aid of this money that  
3 comes out of the Health Affairs Office -- do I  
4 have that correct? -- it's DHP money -- they  
5 provided funding to set up a DoD Center Alliance,  
6 where investigators at USARIEM, in collaboration  
7 with investigators at the Uniformed Services University are  
8 working to jointly to better understand what's  
9 going on in the world of dietary supplements in  
10 our DoD personnel.

11 Now what are they doing? Well part of  
12 the effort is to survey to find out what is being  
13 used so that they can get an idea of what the  
14 background is, in terms of use. To look at -- if  
15 there are some that are standing out as being  
16 really prevalent. And to find an opportunity here  
17 to look for side effects that aren't -- can't --  
18 currently capturing, when people are maybe taking  
19 too much of something.

20 Now, so part of it is to look at use,  
21 and then another is to look at health safety. So  
22 that's this idea of looking for problems. And

1       then if there are some that come out in saying,  
2       this is one that we should probably be looking at,  
3       that's where we would then come back and do  
4       research to say, does this actually work? Okay?  
5       Does that make sense?

6                 In terms of roles, USARIEM's primary  
7       role is in the area of surveillance activities,  
8       and then doing some dietary supplement studies of  
9       ones that we think -- candidates that we think  
10      might have some efficacy. The Uniformed Services  
11      role in this is to serve as that person that's  
12      gathering the information, setting up that library  
13      or repository of information, and then having the  
14      ability to send it out to people who want to  
15      inquire. So it will become that one-stop shop, in  
16      terms of dietary supplement information.

17                So, with that, that gives you the  
18      background of what's going on in nutrition  
19      research. And I'm glad to answer any of your  
20      questions -- or try to.

21                DR. DICKEY: Thank you very much, Dr.  
22      Montain. Dr. Jenkins?

1                   DR. JENKINS: Well, it's a fascinating  
2 body of work that you and Captain Hibbeln have  
3 presented here.

4                   The question I have for you is something  
5 pretty practical -- having spent almost 20 years  
6 at Lackland Air Force Base, wearing a uniform,  
7 became pretty aware of what goes on with the  
8 Airman basic personnel. So kids come off the  
9 streets of America and being turned into airmen in  
10 six or seven weeks at Lackland.

11                   And episodically, we would end up caring  
12 for some of these kids, you know, at the hospital  
13 -- with unbelievable, you know, diseases. Dying  
14 from adenovirus, and adenovirus outbreaks. And  
15 the typical airmen losing 25, 30 pounds during  
16 this basic training period. You could always spot  
17 somebody who was in their third week of training  
18 because they were at their nadir, and they  
19 couldn't look you in the eye, and they walk around  
20 with their head down, and just looking emaciated  
21 as the breakdown process was finishing and the  
22 buildup was about to start. And I've seen kids

1 die of necrotizing fasciitis from arthropod  
2 assault, or folliculitis, as there's some  
3 immunocompromise that strikes these kids in that  
4 setting.

5 This would seem to me to be a prime  
6 proving ground for this nutritional research to  
7 actually make an impact, that you should be able  
8 to get better, smarter, faster -- or, you know,  
9 better, smarter airmen faster with less disease  
10 impact, to be able to plot that against historical  
11 norms and even cohort, you know, group against  
12 group.

13 Is that something that you guys do? Or  
14 should be looking at?

15 DR. MOUNTAIN: Yes, if we think about it  
16 historically, we spent quite a bit of time in the  
17 1990s working with the Rangers and Special  
18 Operations Command, when different -- when soldiers  
19 were going through those two training scenarios,  
20 and studying the impact of how they were fed, on  
21 their nutritional -- or their immune  
22 responsiveness. So we would actually -- one was

1 just characterized, and we could see that immune  
2 function was changing. And then we did dietary  
3 interventions to see if we could attenuate any of  
4 that through the way that they were eating.

5 So, in fact, we've done the type of work  
6 that you've described.

7 Now, are we doing it in a basic training  
8 environment? The way we're doing it now in the  
9 basic training environment is primarily through --  
10 was the iron study I described, and now with the  
11 vitamin D and calcium.

12 The Soldier Fueling Initiative, where  
13 they're changing how the basic trainees eat, that  
14 unfortunately got initiated before they could  
15 collect the background information. So we don't  
16 have a good "where were they?" but we're  
17 collecting where they are now, just the way you  
18 described. So that's ongoing.

19 Does that make sense? So, one challenge  
20 we have in working this type of study that you  
21 were describing is getting access and getting  
22 command support to intervene in some of those

1 environments.

2 DR. JENKINS: I don't know, but I think  
3 maybe the Deputy Surgeon General of the United  
4 States Air Force might have something to say about  
5 that access.

6 DR. DICKEY: Dr. Anderson.

7 MAJ GEN (Ret.) ANDERSON: Yes, thank you for  
8 both of these talks. Omega-3s were presented as a  
9 deficiency problem. This is a really broad  
10 question. But how is your level of understanding  
11 of the nutritional status of military members in  
12 various military occupations? And I'm thinking, you  
13 know, of human performance, but also trying to  
14 understand the baseline in the first place?

15 DR. MONTAIN: Yeah -- in terms of where  
16 we are in terms of total nutritional status?  
17 Usually, when you survey blood chemistries as a  
18 marker of nutritional status -- which has its own  
19 problems and limitations -- it's hard to see  
20 nutritional, gross nutritional deficiencies in our  
21 personnel.

22 But if you look at, in terms of their

1 behaviors, and when they self-report, or we  
2 observe them in terms of what their eating  
3 practices are, they don't come close to meeting  
4 what we would say a healthy diet is.

5           Like in the Survey of Health Behaviors  
6 that comes out every few years, where they look at  
7 the way people drive and the like, they included  
8 questions about dietary practices. And only about  
9 10 to 15 percent would have been eating the  
10 recommended amounts of fruits and vegetables,  
11 dairy, whole grains. I mean, it's just -- and  
12 when you start to combine them, it gets even  
13 worse.

14           So we aren't very good -- if those are  
15 true indicators of nutritional adequacy as we look  
16 at behavior, we aren't very good.

17           If we look at blood chemistries, it's  
18 hard to say that anyone is nutritionally  
19 deficient. But blood chemistries don't tell you  
20 much about what's going on inside the cells.

21           MAJ GEN (Ret.) ANDERSON: You know, your answer  
22 is really what I suspected it would be. And I

1 think maybe this is a, you know, a two-talk dive  
2 into nutritional science. But really  
3 understanding the status of nutrition in the  
4 military is a much bigger area, and probably very  
5 important.

6           Your probably aware of the emerging  
7 lifestyle medicine approach now, which really  
8 calls for prescriptions for diet, essentially, and  
9 is part of individualized health care. And if you  
10 take that into the occupational medicine and  
11 clinical preventive services arena, we've got a  
12 long ways to go. No doubt that the nutritional  
13 needs of Army infantry troops is quite different  
14 than you might find in the Air Force or shipboard  
15 Navy or submarine force.

16           So I think you've got a lot of work  
17 ahead of you. And maybe this is something for the  
18 Defense Health Board to think about at sort of the  
19 grander scale, as well.

20           DR. DICKEY: Dr. Carmona?

21           DR. CARMONA: Thank you very much for  
22 your very informative presentation.

1           You know, I think there's a body of  
2 literature out there that's very complementary to  
3 what we want to do. Because when I look at our  
4 warriors, they're really tactical athletes. And  
5 we step across the line and we look at Olympic  
6 athletes and the testing centers, and the  
7 pressures that are put upon them -- really, it's  
8 not identical, but the stresses, the move to  
9 enhance performance, and all of the different  
10 disciplines that are that athletes are, isn't a  
11 lot difference than enhancing performance in our  
12 warriors.

13           Now, as you well know, many years ago,  
14 in Special Operations, we started looking at this.  
15 It's been over two decades, now, when we first  
16 look at Seals and Army Special Forces guys when I  
17 was still on Active Duty. And, in fact, there was  
18 a lot of telling information there, too. And at  
19 that point, our operators were just eating  
20 randomly, but yet they were expected to perform at  
21 extraordinarily high levels. And we recognized  
22 that the fuel we put into those bodies really made

1 a difference as to how they could perform.

2           So I would suggest that, as we look at  
3 our warriors and we move forward, in fact they are  
4 tactical athletes. And to optimize their  
5 performance, we must optimize their nutrition.

6           DR. MONTAIN: And there are active  
7 efforts, in terms of -- to get them to eat well,  
8 they have to be educated. And historically we've  
9 not done a very good job on that educational arm,  
10 of getting people to eat right. A lot of these  
11 kids, we make the assumption they came out of high  
12 school, they should know how to eat. The reality  
13 is they are poorly educated in terms of  
14 nutritional knowledge.

15           Each of the -- I won't say each of the  
16 Services, but I will say that the Marine Corps has  
17 taken on an activity that has an insertion of  
18 education to it. And I'll go into what that is.  
19 But the Army, with their Soldier Fueling  
20 Initiative, is doing the same.

21           Now, the Air Force and the Navy might be  
22 doing something, I'm just not aware.

1                   In the Marine Corps, what they're doing  
2                   is they're changing the dining hall -- or that was  
3                   the plan, at least, as of a year ago. I haven't  
4                   heard if they actually rolled it out. They were  
5                   going to change the dining hall. And the way it  
6                   was going to work is, the soldier would have to --  
7                   or the Marine would have to walk through and grab  
8                   their food and then come out to the cash register.  
9                   The cash register was rigged up so that it was  
10                  keeping track of their inventory. So that gave  
11                  them the data base to know exactly what they took.  
12                  Not what they consumed, but what they took.

13                  And before they got to the dining hall,  
14                  they were going to be told that, based upon  
15                  certain criteria that they had in place, which  
16                  diet was going to be the best diet for them. So,  
17                  let's call it Red, Green, and Yellow. So you knew  
18                  you were a Red, and the food that they were going  
19                  to go buy was going to give them clues as to which  
20                  is a Red food and which is a Green food and which  
21                  is a Yellow food. So they were supposed to find  
22                  things that would map out, that over the course of

1 the day they would eat a Red diet. Or you might  
2 get the Green diet.

3 And then when they would go through the  
4 inventory, now they would have it. And they would  
5 actually have feedback that they could provide  
6 that marine's leader as to whether they were  
7 complying or not. And then they could use that as  
8 a training tool to get them to eat appropriately.

9 Now, what were the Red, Green, and  
10 Yellows for? One dealt with a diet that was  
11 really a heavy-calorie, energy-dense diet. One  
12 would be more of an in-between. And the other  
13 would be something very light, low energy-dense  
14 food, so you could eat quite a bit, but you  
15 wouldn't get very many calories.

16 And they were going to use it as a  
17 strategy to help them understand which foods have  
18 calories, and then also which foods are the ones  
19 you want to pick, in terms of fruits, vegetables  
20 and the like.

21 DR. CARMONA: I think your points are  
22 very well taken. A couple of comments on that.

1           In highly motivated troops, who want to  
2       become a marine, or become a seal, or become a  
3       Special Forces operator, it's easy for them to  
4       change their culture. But for the masses, it's  
5       very difficult. And really, what we have is a  
6       challenge in the nation of acculturation. You  
7       know, I'm not blaming fast-food, but part of  
8       fast-food, people don't eat, they graze, they grab  
9       whatever they can. They're not thinking about the  
10      quality and the quantity of fuel that they're  
11      putting into their system.

12           So the failure is really in society,  
13      because that's our cohort where we get our  
14      operators, where we get our warriors from. They  
15      come from society, and they come in with the bad  
16      habits.

17           It's unreasonable, I think, for us to  
18      think that we are going to change 18 or 20 years  
19      of bad habits as we bring these folks in. The  
20      issue is really one of health literacy of the  
21      nation, where this nation is fairly health  
22      illiterate in just about everything -- and

1 especially nutrition: how to buy food, how to cook  
2 food, appropriate portion sizes, and the quality  
3 and quantity of fuel you need to do whatever your  
4 core competency is.

5           So I want to, I guess, make the comment  
6 that I don't see this as a Department of Defense  
7 responsibility. It really is a national  
8 responsibility, where the pipeline begins in  
9 childhood, before those young men and women become  
10 soldiers, sailors, airmen and so on.

11           We're fortunate that we have converted  
12 some -- as you've pointed out. But highly  
13 motivated troops who have a goal in mind, it's a  
14 little easier for them to switch, because they  
15 want to be a marine, they want to be a seal, they  
16 want to be a Green Beret, et cetera. But that's  
17 really a small part of it.

18           So I personally appreciate all the work  
19 you're doing in identifying the variables that are  
20 involved. But I think this is a bigger problem  
21 that we're going to have to deal with as a nation,  
22 as it relates to the unusual disease and economic

1       burden that is largely preventable in our society  
2       today.

3                   DR. MONTAIN:  Oh, I agree completely.

4                   HON. WEST:  I don't.  I don't agree  
5       completely with that.  We've been changing  
6       acculturations and developed-habits in the  
7       Department of Defense for as long as we've had  
8       one, for as long as we've had the Services.  What  
9       we think we do best is to bring people in --  
10      especially the youngsters -- and given them a new  
11      reason, and a new way of looking at themselves and  
12      what they do.  What is it?  We make them part of  
13      something larger than themselves.

14                   It may be that over time we have begun  
15      to do it differently.  But we believe we know how  
16      to change habits.  It's what we base our military  
17      discipline on, and our belief that we're going to  
18      succeed.

19                   One of the things we used to do is we  
20      did tell them what to eat, because they all ate in  
21      the mess hall.  We have a different situation now.  
22      And I agree that it's a societal problem.  But

1 let's not let the Department of Defense off the  
2 hook. We have a role to play here, and we can  
3 play it.

4 DR. CARMONA: I would agree with you,  
5 Mr. Secretary, that we're not letting the  
6 Department of Defense off the hook. What I was  
7 suggesting was that the Department of Defense  
8 cannot bear all the responsibility for a nation  
9 that's gone astray as it relates to its  
10 nutritional requirements.

11 HON. WEST: As long as their ours, we can  
12 bear all the responsibility. When they're not,  
13 that's different.

14 DR. DICKEY: We have a comment in the  
15 back. Please identify yourself as you come to the  
16 microphone.

17 CAPT HIBBELN: This is Joe Hibbeln. The  
18 super-chicken project is our first development to  
19 answer this call as to how to economically and  
20 efficiently change the health through stealth, to  
21 bypass the education, so that if we can -- we can  
22 start with Omega-3 fatty acids in chickens by

1 changing their diet. Therefore we hope to provide  
2 fried chicken, fried in the right oils, eating the  
3 right foods, that is going to reduce  
4 cardiovascular health and improve the athletics of  
5 the soldier's brain -- not only of their body.

6 And we are trying to answer your call,  
7 as to how to do this economically and efficiently.  
8 Because we also know that it has to be done at a  
9 low cost, high throughput system.

10 If we can successfully develop these  
11 chickens, these eggs, these pork to deliver these  
12 nutrients, and the DoD supports this effort, it is  
13 a gift that the DoD can give to the rest of  
14 society and to the rest of health.

15 DR. DICKEY: Thank you. Other comments?  
16 It seems to me that the project you were  
17 describing in the marine mess hall -- is that  
18 right --

19 DR. MONTAIN: Mm-hmm.

20 DR. DICKEY: -- that may have  
21 significant application. I can see that applied  
22 in the school cafeteria, for example, where we can

1 give feedback to students -- although much like  
2 your people who are on Active Duty, they no longer  
3 all eat in the cafeteria. They bring their food,  
4 or they put their nickels in the Coke machine.

5 But, thank you. Lots of insights, and  
6 lots of potential follow-up that we can do here,  
7 as well.

8 DR. MONTAIN: And I have to say that  
9 whether the Marine Corps ever did this, I don't  
10 know. This is what they were discussing doing  
11 about a year ago. And they were planning to do a  
12 first roll-out of it to see if it would work  
13 around last February. But I'm not aware -- and  
14 maybe someone else is -- if they ever did it. So  
15 don't take it as they actually did it. It's just  
16 the concept, what they were going to do.

17 DR. DICKEY: Very detailed concept for  
18 not going forward, don't they. Okay.

19 Other comments or questions. Thank you  
20 very much, Dr. Montain.

21 DR. MONTAIN: Thank you.

22 DR. DICKEY: I think we're scheduled for

1 a short break. Let's see, it is 2:45. We'll  
2 resume here at three o'clock.

3 (Recess)

4 DR. DICKEY: Now, this particular  
5 meeting is just chockablock full of information.  
6 And so as we pack your brains, keep in mind that  
7 we're move to action items at a future meeting,  
8 and you'll have to recall all of this. So  
9 hopefully it's a fish restaurant tonight, right?  
10 I come from Texas. Beef's for -- you notice he  
11 talked about super-chicken, and super-pork. He  
12 didn't say anything about super-beef. (Laughter.)  
13 I guess they won't eat the soybeans.

14 Our next presentation will be delivered  
15 by Vice Admiral John Mateczun. Admiral Mateczun  
16 is the Commander of the Joint Task Force National  
17 Capital Region Medical, which completed the  
18 largest and most complex base realignment and  
19 closure project in the history of the DoD, merging  
20 the National Naval Medical Center and Walter Reed  
21 Army Medical Center into the Walter Reed National  
22 Military Medical Center, the nation's largest

1 military hospital -- which we, of course, heard  
2 about through the process.

3 Admiral Mateczun has a medical degree  
4 from the University of New Mexico, a Master of  
5 Public Health degree from the University of  
6 California-Berkeley, and a law degree from  
7 Georgetown University Law Center.

8 He's going to present an update for us  
9 regarding the National Capital Region Medical, and  
10 the integration of health services. His slides  
11 are in Tab 10 of your meeting binders.

12 Admiral Mateczun.

13 VADM MATECZUN: Thank you, Madam  
14 President. Good afternoon, everybody.

15 I'm here to tell -- you know, when I was  
16 enlisted in the Army and I ended up as a Staff  
17 Sergeant, I survived two tours in Vietnam, and did  
18 get honorably discharged. But I still remember  
19 going to basic training, and they taught me how to  
20 be an instructor. And they said, okay. Here's  
21 the way it goes. Tell them what you're going to  
22 tell them. Tell them. And then tell them what

1 you told them. And, hey, I tell you, it's worked  
2 out for me as a lecturer and all kinds of things.

3 So over the past three years I've been  
4 here telling you what we were going to do. I told  
5 you what we did just before we finished up the  
6 BRAC, and I'm here to finish up and tell you, you  
7 know, what we did, so that I can finish the  
8 instruction cycle, and maintain adherence to  
9 doctrine in terms of education.

10 Slide. So I'm going to give you the  
11 background, talk about the BRAC -- summary, the  
12 hospital projects. And then you asked for some  
13 words on the way ahead. And I'm going to talk  
14 about two things: the Comprehensive Master Plan,  
15 which we've discussed here previously, and the  
16 integrated delivery system that's going to happen  
17 in the NCR.

18 Slide. So BRAC. Back in 2003, 2004,  
19 Joint Cross-Service Working Group started when  
20 General Meyer was still over as the Chairman. And  
21 everybody got together and said, you know, four  
22 in-patient hospitals in the National Capital

1       Region just doesn't make much sense from a  
2       business perspective. And so we're going to  
3       combine them into two. And so that was the basic  
4       underlying assumption of what was going to happen  
5       during the BRAC processes.

6               So the idea was that we would close the  
7       Walter Reed Army Medical Center, Close Malcolm  
8       Grove Medical Center as an in-patient facility,  
9       and then expand the in-patient capabilities at  
10       Bethesda into Walter Reed National Military  
11       Medical Center, and at Fort Belvoir, at Fort  
12       Belvoir Community Hospital.

13              So after all of the estimates, it ended  
14       up costing \$2.8 billion to do the construction,  
15       the outfitting, and all the other associated  
16       pieces of what we had to do. We built 3 million  
17       square feet of new and renovated construction --  
18       2-1/2 million new, and 500,000 renovated. Moved  
19       over 4,200 people. And moved 224 wounded warriors  
20       and their families.

21              So the JTF part of that was -- in  
22       September 2007 we were established. And this was

1 after the February 2007 articles in The Washington  
2 Post on Walter Reed, and the Dole-Shelala  
3 Commission. And I see Secretary West -- Secretary  
4 West, who headed up the Independent Review Group,  
5 you know, as well -- made their recommendations to  
6 the Department, looked hard at what was going on  
7 in the hospitals in the NCR, and said you have to  
8 have some authority, some organizational entity  
9 that can bring these things together in the  
10 National Capital Region.

11 So in September of 2007 JTF CAPMED was  
12 established to do those things, and to do a couple  
13 of other things, as well. That's not our only  
14 mission. I'm responsible for the health care  
15 delivery within the National Capital Region.

16 But we did, in terms of the BRAC  
17 activities, execute all the medical BRAC actions,  
18 execute a guaranteed placement program that was  
19 put into place to keep Walter Reed civilian  
20 personnel, in particular, working while we  
21 continued to fight the war, so that they didn't  
22 leave Walter Read without the staff that

1       it needed to take care of that mission.

2                   And they formed the nucleus of the staff  
3       that we had to put together to run these two new  
4       hospitals. And so we established a single  
5       civilian personnel workforce. And so we have  
6       roughly 4,400 people now, in a single DoD  
7       workforce, where we had Army and Navy civilian  
8       human resources before.

9                   Slide. Okay, I'm here to, honestly,  
10       brag a little bit. This is something that nobody  
11       ever did in the history of the Department. And it  
12       was actually a lot harder than we anticipated.  
13       And there were a certainly a lot of predictions  
14       that we would not make it. And we just had  
15       Secretary Lynn out, just as he was leaving the  
16       Department, and he remembered really starting to  
17       pay attention to this about 18 months out from the  
18       actual execution of the transitions, which we did  
19       in August. He said, you know, we told him that we  
20       were on time, and that we thought we could make  
21       it. And his thoughts were, as he remembered,  
22       nobody's ever made a project like this in the

1 Department on time before. And so he started  
2 thinking about fallback plans right away.

3           Nevertheless, through the next 18 months  
4 we stuck with it. We didn't have much changed,  
5 and we were able to execute these projects that  
6 you see here.

7           So 1.6 million new square feet, about  
8 500,000 renovated square feet, 6,100 new parking  
9 spots, and about 600 new spaces for Wounded  
10 Warriors to lodge in. The Wounded Warrior lodging  
11 was one of the biggest adaptations that we had to  
12 make, because the mission changed in this war.  
13 Our mission prior to this was making a  
14 determination about whether people would be able  
15 to return to active duty or not. If not, sending  
16 them to the VA for rehabilitation.

17           In this war, that's all changed. And so  
18 we now have, at the direction of the Service  
19 Secretaries and the Chairman, a substantial  
20 rehabilitation program that returns the most  
21 severely injured, occasionally, to Active Duty.  
22 And that requires that we have the lodging to

1 support them in intermediate rehabilitation -- ADA  
2 compliance, and able to return them to the  
3 activities of daily living and daily duty.

4 In terms of outfitting, we had  
5 extraordinary success with an outfitting contract  
6 at an Army hospital at the time, and a Navy  
7 hospital -- so they would have been going under  
8 two different outfitting and transition contracts.  
9 You've got to think that there's some economy of  
10 scale between those two.

11 And additionally, if you start looking  
12 to the future, there's no way to really combine  
13 maintenance contracts for radiology equipment,  
14 nuclear medicine and all of the other gear that we  
15 have, unless you've got one set of items. And it  
16 makes it a lot easier to move from hospital to  
17 hospital if you're going to be working with the  
18 same operating room sets, as an example.

19 So there's an independent government  
20 cost estimate that that was going to cost right at  
21 \$400 million, 390-some. By consolidating the  
22 contracts, we achieved the bit savings of \$77

1 million against that independent government cost  
2 estimate.

3           And then -- and then -- in execution, we  
4 saved another 9.5 percent on that contract, \$32  
5 million, because of the incentivizing for putting  
6 together equipment. And the contractor shared  
7 with us on that savings. And so they looked for  
8 the lowest price and best equipment that met the  
9 requirements that we had.

10           So we reused almost 11,000 equipment  
11 items at Walter Reed, about \$114 million -- and  
12 that's still growing, we just moved some more  
13 additional equipment last week -- 158,000 line  
14 items, stock items of equipment. That's a lot of  
15 stock items. I will tell you, we've got now, I  
16 think, the most current what-does-it-take-to-  
17 outfit-a-medical-center and  
18 what-does-it-take-to-outfit-a-community hospital  
19 list in the world.

20           And we had to invent a new way to do it.  
21 Because you can't just order 156,000 line items at  
22 one time. So we invented an ATP, or Authority to

1 Proceed, and we ended up with 46 of those as we  
2 proceeded. As we completed one part of the  
3 equipment, we started consolidating in between the  
4 hospitals, we would release those lists, give an  
5 authority to proceed, and we prioritized, started  
6 out with the long-lead equipment first, and then  
7 were able to continue that up to the end. So a  
8 new way of hospital outfitting that worked really  
9 well.

10 Patient reassignment. We had to move  
11 34,000 enrollees from Walter Reed to other NCR or  
12 MTFs. And we were able to do that in a way that  
13 accommodated all patient preferences. To date, we  
14 haven't had to tell anybody no.

15 And, in fact, we had to accommodate  
16 10,000 new patients, roughly, in terms of people  
17 moving into the NCR because of BRAC moves. So we  
18 did that all within existing resources, and able  
19 to accommodate all patient preferences. Truly an  
20 accomplishment -- 38,000 people is a lot of  
21 people. And I have gotten letters now, we're  
22 still getting letters from folks that realize that

1 Walter Reed closed, and they've either driven by  
2 and they weren't able to get in the gate, or they  
3 called up and they weren't able to get an  
4 appointment there anymore. And so we're still  
5 getting some letters from them, even though we did  
6 send out 34,000 letters.

7           Additionally, we've got now a single  
8 appointing number for what we call an IRMAC --  
9 Integrated Referral, Management, and Appointing  
10 Center. So they're handling the appointing for  
11 all of those appointments that go on. They get  
12 roughly, right now, 4,000 calls a week. And so  
13 it's busy. It's actually busier than it was --  
14 than all the centers that existed before at each  
15 of the hospitals were individually.

16           But the big payoff here is going to be  
17 the referral management. And so we'll be able to  
18 consolidate all those referrals, and we anticipate  
19 being able to call people proactively and set up  
20 appointments for them, rather than waiting for  
21 them to do it themselves and (inaudible) or not  
22 getting the consult that they were given.

1           Slide. Transition -- boy, that's a lot  
2 of people moving, I'll tell you. You know, we  
3 really tried to look at this as what we call  
4 reception staging and onward movement and  
5 integration -- RSO&I. And that worked for us.

6           So, really, almost 9,000 people ended up  
7 moving, either from office to office, inside  
8 Bethesda, for instance, across the street, as they  
9 did from DeWitt to the Fort Belvoir Community  
10 Hospital, or from Walter Reed to both of those  
11 places. So over the last six months we had a lot  
12 of people moving. But it was really all of the  
13 people from Walter Reed that had to move in August  
14 of this year.

15           And so we got all of them moved -- moved  
16 750,000 cubic feet. That's a lot of cubes, for  
17 those of you that do logistics. And 168  
18 in-patients, and a lot of out-patient wounded  
19 warriors.

20           And I used to, when I gave my reports to  
21 Secretary Lynn, he'd say, So, let me see if I got  
22 this right. It's really a tight schedule, but we

1 can make it unless there is an act of God in  
2 August, like a hurricane. And I'd say, Yes,  
3 Secretary Lynn, that's correct. Yes, sir. So, in  
4 August we had an earthquake, a hurricane.

5 In terms of plague and pestilence, you  
6 might be asking, So what happened? Well, we did  
7 find West Nile virus on the Bethesda campus in  
8 mosquitoes. But we didn't get any frogs falling  
9 from the sky. Everything else, we had.

10 Manpower and personnel, we had the  
11 guaranteed placement program that I talked about,  
12 that's the largest guaranteed placement program in  
13 the history of the Department. We did convert, do  
14 a successful conversion of 4,400 service  
15 civilians, also never done before in the  
16 Department. And we had to develop the workforce  
17 mapping and migration for all of those employees.

18 So in all of that process, we were able  
19 to manage, for the vast majority of people, the  
20 site of -- the employment site of their  
21 preference. And a lot of Active Duty orders had  
22 to, of course, accompany those people.

1           IMIT -- we're executing a joint medical  
2 network which will provide a common desktop, a  
3 standardized suite of IT tools for providers  
4 across the NCR. And actually, what it will do --  
5 and General Green and I -- Bruce Green, the  
6 Surgeon General of the Air Force, used to talk  
7 about this periodically. And I said, I can drive  
8 an x-ray around the beltway quicker than I can  
9 move it in our current IT systems. And he said,  
10 No, that can't be true. And I challenged him. I  
11 said, Okay, let's go sit out at the ER at Andrews,  
12 and we'll see.

13           And he hasn't taken me up on it yet.  
14 We've still got a couple of months before we get  
15 it done, where I can prove it.

16           But it is literally true. You cannot  
17 move an image around here from network to network.  
18 And I asked my guys to prove it to me, because I  
19 didn't believe it, either.

20           So here's what it takes. So I'm at  
21 Andrews Air Force Base. I'm a Wounded Warrior. I  
22 just got seen at Bethesda, or discharged from

1       Bethesda earlier that day. I'm in the emergency  
2       department. I want the x-ray.

3                 Okay, I've got to call over to Bethesda.  
4       First, I've got to find out where the x-ray is, if  
5       I can do that. But if I know they took one at  
6       Bethesda, then I call over there. And the  
7       radiology department -- this is on a weekend  
8       maybe, maybe not -- has to call in a system  
9       administrator. The system administrator has to  
10      put that x-ray into the system. It then has to  
11      bump across the Navy fire-walls to get out into  
12      the NIPRNet. In the NIPRNet, it competes for  
13      broadband, and so it goes out in these little  
14      packs in the NIPRNet. And eventually it ends up  
15      over at, you know, the Air Force fire-walls at  
16      Andrews. And then it bumps across those. Finally  
17      gets into Malcolm Grove. And then you've got to  
18      get a system administrator in the Malcolm Grove to  
19      pull it out. And then they've got to take it from  
20      there to the ER.

21                 And literally -- so, literally -- I can  
22      drive an x-ray right now around the beltway if

1     you're not on the same part of the network. This  
2     will take care of that problem. It will allow us  
3     to move that -- not just that data, but all  
4     patient data, you know, around amongst the clinics  
5     and hospitals here in the NCR in an effective way.

6             It will also reduce sustainment costs in  
7     the facilities, because we're coming into one  
8     medical network. I'm a provider, I'm able to log  
9     in anyplace that's on that network and have the  
10    same desktop, and access to the same information  
11    that I've got anyplace else.

12            And so it's, I think, the way ahead for  
13    medical networks in the Military Health System.

14            Slide. All right, that's a little bit  
15    of the kind of numbers, the facts of what we did.  
16    I'll give you a couple of other comparisons.

17            The footprint now of the hospital at  
18    Bethesda -- which is there on the top. That's the  
19    Medical Center -- the footprint of that Medical  
20    Center is the footprint of the Mall of the  
21    Americas. And so although we don't have an  
22    amusement part in the center, we have the same

1 way-finding and parking problems that they do.  
2 The footprint of the Fort Belvoir Community  
3 hospital is the footprint of the Springfield Mall.

4           So these are very, very large  
5 facilities. Just as an item of interest, that's  
6 created some difficulties. You can't rely on the  
7 Code Team to get over from way on the far right,  
8 which is where the in-patients are, to way over on  
9 the far left, where the out-patient building is,  
10 in any kind of timely manner. And so we think  
11 we've worked that one.

12           But here's one that everybody's  
13 struggling with. So, if somebody's in the Medical  
14 Center, you know, how do they call for help if  
15 they fall down in one of those vast spaces in  
16 between there?

17           A lot of people have a lot of different  
18 solutions, but we used to have a lot of telephones  
19 on walls in hospitals. And they don't exist  
20 anymore. There aren't even pay phones.

21           And so we're working through, right now,  
22 trying to figure out if somebody calls 911 on

1       their cell phone, where does it go? Can we  
2       intercept that, and can we do some other things  
3       to take care of it? But it's not a trivial  
4       problem when you've got a footprint of the Mall of  
5       the Americas.

6               Slide. Okay, these are some of the BRAC  
7       renovations. You know, we started out and we were  
8       going to mostly just renovate these double-patient  
9       rooms. But Congress then came back and said, hey,  
10      you said you're going to world-class, so prove it.  
11      And they had the group that sat here on the NCR  
12      that took a look at world-class, and that group  
13      reported back out to the Department and said, No,  
14      'world- class' is single-patient rooms. And so one  
15      of the things the Department did was to move ahead  
16      and say, well, we're going to enhance and  
17      accelerate part of those renovations. And so all  
18      but about 50 rooms now are renovated into  
19      single-patient rooms at Bethesda. And to meet  
20      that world-class standard, we still have to go  
21      back and renovate those other 66 single-patient  
22      rooms.

1                   Slide. This is the intermediate rehab  
2 lodging. It's what it looks like. It's ADA  
3 compliant. ADA is not one-size-fits-all. And so,  
4 for Wounded Warriors, for instance, you'll see  
5 some of the -- in that upper left-hand corner,  
6 where it says Warrior Suite -- that upper left  
7 picture is one of the bedrooms.

8                   Well, the Wounded Warriors have  
9 different requirements. If they have prosthetics,  
10 they want a wider bed, they want a double bed, so  
11 that they can put on their prosthetic as they lay  
12 there. A single bed is not enough room for them  
13 to do that. If they've got a lot of hardware on  
14 because they're in limb-salvage, you know,  
15 sometimes it provides enough room, sometimes not.  
16 And so we compromised and we put bigger beds into  
17 the rooms where they need them.

18                   We're also able to accommodate spouses  
19 and non-medical attendants here. So if they have  
20 a spouse, the spouse is able to stay in a room  
21 with them. In fact, we've got some families  
22 living in these suites. They're built in terms of

1 suite. And so we have 153 suites there. And  
2 we're getting ready to start building another  
3 hundred on the Bethesda campus this fall. That  
4 will start well.

5 So you've got to be able to do this,  
6 really, if you want to do rehabilitation. You've  
7 got to have something that accommodates their  
8 needs after they're out of the hospital.

9 Slide. Comprehensive Master Plan is the  
10 Department's response to how are we going to get  
11 to that world-class standard. And so you see here  
12 the numbers that have gone over to the Hill.  
13 These numbers were in the President's budget last  
14 year. And they get us to that world-class  
15 standard.

16 There were a couple of things that are  
17 not in this plan we're already working on. The  
18 operating rooms, the panel said, You've got to  
19 have operating rooms that are of a size that you  
20 accommodate complex equipment coming in there.  
21 And so we're finishing that up. We've renovated,  
22 while the BRAC was going on, 10 of those operating

1 rooms. And now we've got another eight to go.  
2 And so we just started on the first of November  
3 doing that.

4 In August we had to make sure that we  
5 had enough operating room capacity to take care of  
6 the amputees, in particular, that were coming  
7 back. And so we had a lot of debates in the  
8 Department about how to model that. But we had  
9 ample space in the operating rooms to be able to  
10 make sure that during the height of the fighting  
11 season we could take care of those Wounded  
12 Warriors coming back.

13 The Wounded Warriors now coming back  
14 are, the majority are multiple amputees -- which  
15 is unlike Iraq. And so there are single amputees.  
16 Everybody else has either two, three or -- in  
17 three cases -- four amputations of limbs, that's  
18 in rehabilitation. So it's a great thing to see,  
19 honestly, when they get out of the in- patient  
20 side.

21 The in-patient requirements have almost  
22 tripled, in terms of operating room time and

1 length of stay. So it used to be that we'd have  
2 people in for three or four weeks. Now the  
3 average length of stay is six. And our average OR  
4 time is more than 700 hours for each of those  
5 patients. And it's over a six-week period. So  
6 you really use up ORs. You chew up OR time with  
7 multiple amputees.

8 In fact, we are now seeing the sickest  
9 patients in the world, with the highest survival  
10 rate. This is an extraordinary capability for the  
11 military. And nobody is handling this complexity  
12 of trauma care and rehabilitation in the world  
13 today -- certainly at this volume. In fact, most  
14 hospitals would be overwhelmed with three or four  
15 of these cases, I think.

16 Slide. So, this is basically the  
17 solution to the space problems at Bethesda. This  
18 is kind of in back of the tower. The tower is in  
19 the bottom center, there, with the out-patient  
20 building on the left, and most of the in-patient  
21 capabilities on the right.

22 And so there's a bunch of smaller

1 buildings that are in there that don't really  
2 match up with the requirements. We found out, as  
3 we opened up the current walls for renovation,  
4 that renovation is not a good solution to  
5 rebuilding medical facilities. You actually end  
6 up with less space than you started with, because  
7 you've got to close in walls, and you've got to  
8 get everything -- once you open up one of those  
9 walls, you've got to get everything back up to  
10 current code and standards. And that was an  
11 expensive part of the renovations, the 500,000  
12 feet of renovations that we did on this campus.

13 So the solution right now is a new  
14 clinical building that goes back in there behind  
15 the tower, you know, to rationalize what's going  
16 to go on back there. And provide a -- right now,  
17 we put an ambulatory surgery center, women's  
18 health, a simulation center. And one of the  
19 elements of world-class is to have space for  
20 patients to do other things -- so, basically, a  
21 small patient mall.

22 Slide. The other thing that we were

1 charged with is putting together an integrated  
2 delivery system, anchored by these hospitals -- a  
3 community hospital in the south, and a medical  
4 center in the north. I will not say this is  
5 without debate in the Department. I will say that  
6 competing medical centers, dueling medical  
7 centers, is not an efficient answer -- from the  
8 perspective of an integrated delivery system. So  
9 the exact reason that we underwent the BRAC was to  
10 move away from dueling medical centers, and  
11 recreating them is probably not optimal.

12           Nevertheless, Fort Belvoir -- as you see  
13 on the right -- has an extraordinary amount of new  
14 capabilities. It's at three times the size of the  
15 staff that it used to have. It now has a lot of  
16 ICU. And so we moved in a lot of secondary  
17 specialty services.

18           As part of the BRAC law, we had to go  
19 through and make sure that community hospitals  
20 across America delivered this kind of service.  
21 And so we generally stopped at interventional  
22 stuff -- interventional radiology, interventional

1       cardiology. But cardiac catheters are well  
2       established in community hospitals across America  
3       -- as is nuclear medicine, we found out.

4               So this provides a site for delivery of  
5       services to our patient population, which is  
6       drifting south to some degree. Actually, it's  
7       kind of always been south, it's drifting there a  
8       little bit more.

9               Bethesda, staff is about 6,000 there.  
10       And it has new capabilities, in addition to what  
11       we had that was world class at both Walter Reed  
12       and Bethesda before.

13              So you see Vision Centers of Excellence,  
14       which is just getting ready to open up, the NICU,  
15       which is open, 2-B Nursery, level-one trauma care  
16       capability. Consolidated Cancer Center is  
17       probably one of the most forward-looking  
18       initiatives. We're trying to put together all of  
19       the Centers of Excellence that existed, mostly  
20       because they're Congressional mandates, into a  
21       comprehensive cancer center for patients, so that  
22       they will be able to come in and have one-stop

1 shopping. But we'll be able to consolidate  
2 cosmetic services, for example, counseling  
3 services, and provide a comprehensive cancer  
4 center that's NCI-designated, as many are across  
5 the country. And we will -- it's our intent to  
6 meet those standards.

7 Slide. So, what does an integrated  
8 delivery system do? We had to struggle with this  
9 in a report back to Congress. And so you'll see  
10 the objectives there. We certainly

11 have to think about quality and cost.  
12 We also have to think about patient responsiveness  
13 and community benefit, so I don't think this will  
14 be any surprise to most of you that are sitting  
15 out there.

16 It is hard to do, in our system, for two  
17 reasons. One is that we don't have a single  
18 system in the military health system. And the  
19 other is that I've found over the last four years  
20 that we are extraordinarily facility-centric. We  
21 can talk regions, and we can talk everything else,  
22 but everything that we do is focused on a

1 hospital or a clinic.

2 So each of those commanders or COs tries  
3 to optimize what they do, and ends up  
4 sub-optimizing the overall regional system to some  
5 degree, no matter how good their intent.

6 Slide. So, the Defense Health Board  
7 panel that took a look at world-class says, you  
8 know, you've got to have a singular organizational  
9 budgetary authority to get to world-class. And  
10 so, over the last two years we've consolidated  
11 those authorities so that right now these  
12 hospitals are under the authority of the JTF  
13 CAPMED.

14 You can see the staff and the workload  
15 that's there. This is not a trivial budget or  
16 workload. Our operations and maintenance budget  
17 is \$1.3 billion for next year. That's 40 percent  
18 of the size of the entire Air Force medical  
19 system, just as an example.

20 And so people often draw comparisons.  
21 We've got to make the right comparisons, I think,  
22 in order to figure out what the (inaudible) needs

1 to be. We have 63 GME programs, and that's about  
2 half of all of the Army's programs. And a third  
3 of the Navy programs are based here in the  
4 National Capital Region.

5 And so we have to make sure, as we take  
6 a look at the beneficiaries, that we're also able  
7 to keep those GME programs operational. And Dr.  
8 Woodson has convened a group to look specially at  
9 this.

10 You know, here, I think, in the NCR, we  
11 have -- if we can't do anything here in the NCR  
12 with the patients that we have, then we're going  
13 to have difficulty anyplace else in the military  
14 health system.

15 Slide. So this is what the IRMAC is  
16 doing. And you'll see that we're getting up our  
17 call volumes. This was an interesting problem in  
18 execution, because everything was local before --  
19 Bethesda, Fort Belvoir, Walter Reed, DeWitt all  
20 had their own independent appointing centers. And  
21 so a lot of the people didn't want to move into  
22 the new call center. So we've been hiring 15 call

1       appointing clerks. And so by the end of this  
2       month we'll be certainly well within the range  
3       that is our target. But it has taken us a little  
4       while to get there.

5                 But here, this is the solution we  
6       believe -- to leakage -- to private sector care.

7                 Slide. So, what's it look like? You  
8       know, how should these beds be distributed? Are  
9       they in the right place? And, you know, where are  
10      we going to be?

11                We've invested heavily in modeling  
12      capabilities, to look ahead, particularly  
13      partnered with the people who did a lot of  
14      modeling out at UCLA Medical Center. They had a  
15      background.

16                And so you can see, in terms of tertiary  
17      care -- and this is about Bethesda, and what's the  
18      occupancy rate going to be out there -- we have  
19      this 350, 360-bed occupancy. And right now we're  
20      running 65 percent. And what we're modeling is  
21      that we're going to get to 84 percent, probably  
22      within the next 18 months. And so the beds that

1 we think that are distributed there for tertiary  
2 care are appropriately placed.

3 Slide. This is the same modeling for  
4 the Fort Belvoir Community Hospital. And you can  
5 see we're going to grow to 57 percent, you know,  
6 out there over the next couple of years.

7 And so we think there's certainly  
8 adequate in-patient capacity in the south part of  
9 the NCR, and that the beds at the new Medical  
10 Center are going to be busy, indeed.

11 Slide. On the primary care side -- you  
12 know, we occasionally get criticized for not  
13 having integrated primary care into the system.  
14 From our perspective that's not correct. We're  
15 bringing all the patients at our Medical Home  
16 models in -- the Air Force, the Army and the Navy  
17 do have different Patient-Centered Medical Home  
18 models.

19 And so we're trying to make sure that  
20 we've allowed for that experimentation. But to  
21 make sure that we have metrics that ensure that  
22 they're all working to the same level for our

1 beneficiaries here in the NCR. And so we've got a  
2 lot of metrics that we've set out, about how we're  
3 going to do that.

4 Right now, we have about 500,000  
5 beneficiaries in the NCR, and about 300,000 of  
6 them are enrolled to TRICARE Prime.

7 Slide. Here is the golden road to  
8 efficiencies in the system. You know, when I was  
9 a medical center commander I took a look at our  
10 budget, and we did an analysis. So, you know,  
11 two- thirds of my budget went to people, and  
12 another 17 percent went to pharmacy. And so,  
13 anything else that you're looking, in terms of  
14 efficiencies, unless you can find efficiencies in  
15 people or the pharmacy, you're working on a pretty  
16 small margin, in order to try to find  
17 efficiencies.

18 This actually works in that area. So  
19 how can we do it? Well, shared services. And so,  
20 do we need to do things with civilian human  
21 resources, IMITs? Supply chain? Kind of planning  
22 for the future?

1           No, we don't. We don't need to have two  
2 systems. In fact, they work against each other --  
3 inevitably. And we've shown it time after time.

4           And so we've moved ahead to the -- we've  
5 consolidated the call center. We've consolidated  
6 budgeting and execution. We're consolidating --  
7 we've consolidated civilian human resources.  
8 We're moving ahead to IMIT. And then we'll start  
9 on the supply chain side.

10           There's a lot of people involved here.  
11 And so as we took a look at our rosters, people  
12 didn't plan ahead and say, You know what? We're  
13 going to be able to find efficiencies as we move  
14 to this new system. So everybody kept pretty much  
15 what they've got. And now it's all in place at  
16 Walter Reed and Fort Belvoir, and we've got to go  
17 down and reach in and say, you know, we've got to  
18 find efficiencies in here. It's the right thing  
19 to do.

20           Slide. This is kind of the doctrine  
21 slide, I learned in the Joint staff, on the Joint  
22 staff, and as we've worked things. Unity of

1 effort means everything. If you can't  
2 achieve unity of effort you will never get to  
3 direct care, private sector care, shared services  
4 or finances. It takes unity of effort. And  
5 doctrinally, in the military, if you wear a  
6 uniform, the road to unity of effort is through  
7 unity of command.

8           So you'll excuse me if I say, I wear a  
9 uniform. I'm pretty proud of wearing it. I've  
10 been wearing it for a long time. And I am a  
11 believer in unity of command as the road to unity  
12 of effort.

13           I think it has the kind of --  
14 command-and-control model has inherent advantages.  
15 I'm not alone. Defense Health Board sub- panel  
16 said the same thing, in terms of arriving at an  
17 integrated delivery system.

18           Slide. So, that completes my -- I told  
19 you what we did, and I told you what I said. And  
20 now I'm open for any questions that you might  
21 have.

22           DR. DICKEY: Thank you very much for

1 that excellent update, Dr. Mateczun.

2 Dr. O'Leary? DR. O'LEARY: Thank you  
3 very much, Admiral Mateczun.

4 That was your usual comprehensive  
5 report. And congratulations on a stupendous  
6 effort. I listened carefully, and some of the  
7 things that you have accomplished were mountains  
8 that we thought might be impossible to climb.  
9 And, you know, you got over them.

10 You still have a few outstanding things  
11 to do -- things like, you know, the single-patient  
12 rooms, the clinical center, the lodging issue and  
13 the operating rooms.

14 What's the time frame for getting those  
15 completed? And the prospects for funding to  
16 support that?

17 VADM MATECZUN: They were both in the  
18 President's budget last year. And the plan goes  
19 out through Fiscal Year '16.

20 And there are more than just the  
21 clinical building. There are a lot of renovations  
22 that have to be done on the compound, as well.

1 We've got to upgrade the power sources, find new  
2 cooling, and make sure everything's up to date.

3 So, it's in the President's budget up  
4 through '16.

5 DR. DICKEY: Doctor?

6 DR. WOODSON: I just wanted to take a  
7 moment to really acknowledge Admiral Mateczun's  
8 part in this publically. I had the opportunity to  
9 sit in on a number of those meetings and briefings  
10 after I took this seat, going up -- marching up to  
11 the date. And there were a lot of moving parts,  
12 there's no doubt about it.

13 But I think it was a successful  
14 operation, in large measure, to Admiral Mateczun's  
15 steady hand.

16 I agree with him 100 percent on sort of  
17 where we need to go in MHS, in terms of unity of  
18 effort, to achieve the efficiencies going forward.  
19 Even as we try and maintain and nurture the  
20 individuality of the Services and what they bring to  
21 innovation in national medical defense, as it  
22 were.

1                   But I couldn't let this opportunity go  
2 without publically thanking Admiral Mateczun on a  
3 superb job, and a job well done. And I think he  
4 deserves a round of applause. (Applause.)

5                   VADM MATECZUN: Thank you. I would just  
6 say that I think the quality of people we have in  
7 the Military Health System today is extraordinary  
8 -- both on the service and the civilian side. And  
9 it's really a testament to them, and their  
10 resilience, that we were able to do this. Because  
11 time after time there was ample opportunity to  
12 fail.

13                  DR. DICKEY: Thank you. Additional  
14 comments or questions? Dr. Higginbotham.

15                  DR. HIGGINBOTHAM: Yes. Excellent job.  
16 And I certainly hope you actually memorialize this  
17 effort in some monograph. Because those of us who  
18 are involved in administration of academic medical  
19 centers certainly can learn from your efforts.

20                  Just one -- a couple of brief questions.  
21 The IT system that you have, is that going to be  
22 compatible with the VA, since we do have Wounded

1 Warriors who may migrate to surrounding VA  
2 hospitals?

3 And the second question is, besides  
4 rehab medicine and cancer, what are some other  
5 clinical services that have been enhanced by this  
6 consolidation?

7 VADM MATECZUN: Thank you.  
8 Memorialization -- yes, we're working right now.  
9 Actually, we're working with the Harvard Kennedy  
10 School and Harvard Business School to put together  
11 a monograph and case study about it. They're very  
12 interested in it, as well.

13 In terms of the -- sorry, what was your  
14 second question? There were three --

15 DR. HIGGINBOTHAM: Compatibility of the  
16 IT system with the VA system.

17 VADM MATECZUN: Ultimately -- but that  
18 it is -- you know, we are part of the Military  
19 Health System IT system right now. And so as that  
20 grooves into compatibility with the VA, yes. But  
21 we're not ahead of that. We're just trying to put  
22 together our -- you know, the system under the

1 current DoD rules right now. Secretary Shinseki  
2 and Secretary Panetta, and Secretary Gates before,  
3 have taken a very active role in making sure that  
4 we achieve that compatibility as soon as we can.

5 But I think that this is evidence for  
6 the rest of America that if you diverge quickly on  
7 systems, and don't have standards set up between  
8 the two of them, then it's very hard to achieve a  
9 record which can move from spot to spot  
10 efficiently.

11 DR. DICKEY: I think as Dr. Woodson and  
12 Dr. Green both implied, we may have great use for  
13 you out in the community, where many of us are not  
14 finding it quite so successful to fold systems  
15 together.

16 VADM MATECZUN: I will say -- and let me  
17 -- there is an interesting thing. I spent two  
18 years, the first two years of this, talking about  
19 culture with people. And the most common reason  
20 for failure in mergers and acquisitions, in  
21 business and in health care, is cited as being  
22 culture.

1                   And so they said, well how are you going  
2 to Army people and Navy people, the Air Force  
3 people, together? And at the end of the day, it  
4 has been much more about business rules than it  
5 has been about any unique aspect of service  
6 culture. What's really hard is telling people,  
7 You can't have your own IM IT people anymore --  
8 whether they be Army or Navy.

9                   So that's the secret to kind of bringing  
10 things together, finding a way to find an umbrella  
11 for putting together the institutions that you're  
12 trying to bring together.

13                  DR. DICKEY: Other comments or  
14 questions? (No response.) Thank you so much for  
15 your leadership and your presentation, sir.

16                  VADM MATECZUN: Thank you.

17                  DR. DICKEY: We are moving into our last  
18 briefing prior to the Administrative Remarks.

19                  Dr. Rotondo serves as Professor and  
20 Chair of the Department of Surgery at the Brody  
21 School of Medicine and East Carolina University.  
22 He distinguished himself early in his career

1 through his energy, enthusiasm, and proclivity for  
2 the management of complex injury -- helping  
3 produce the seminal work on damage-control  
4 surgery.

5 Dr. Rotondo's skills in clinical surgery  
6 and administration led to important contributions  
7 in the development of the Trauma Center at the  
8 University of Pennsylvania, an internationally  
9 renowned academic level-one trauma center.  
10 Additionally, he established the Center of  
11 Excellence for Trauma and Surgical Critical Care,  
12 where he has brought world-class trauma and  
13 critical care to the vastly underserved region of  
14 eastern North Carolina, drawing attention  
15 nationally and dramatically by improving clinical  
16 outcomes for the citizens.

17 He serves as Chair of the American  
18 College of Surgeons' Committee on Trauma. And in  
19 this capacity he recently deemed Landstuhl  
20 Regional Medical Center as a level-one trauma  
21 center, and has just returned from a two-week tour  
22 of Role 3 surgical hospitals in Afghanistan.

1                   He's going to present us an  
2 informational brief detailing the findings from  
3 this tour. And his slides for the board are under  
4 Tab 11.

5                   Dr. Rotondo, welcome. We're delighted  
6 to have you.

7                   DR. ROTONDO: Thank you, Dr. Dickey. I  
8 appreciate that introduction, and I certainly  
9 appreciate being here with all of you, Dr. Woodson  
10 and members of the Defense Health Board.

11                  I must say, this is a very humbling  
12 moment, and somewhat intimidating, to stand before  
13 you as a civilian to share our observations as a  
14 team, after having been asked to take a look at  
15 the system of care that's in place in theater  
16 right now in Afghanistan, and look at the Joint  
17 Trauma System overall.

18                  You heard briefly in that introduction a  
19 couple of threads there: 10 years of work that I  
20 did in an urban environment at the University of  
21 Pennsylvania, now 13 years -- almost 13 years in a  
22 rural environment. And certainly, seeing the

1 system of care that's in place right now at the  
2 time of war, that third strain -- it's at the  
3 intersection of all three of those things, I  
4 think, that we have the most to learn.

5           What can we learn out of urban systems?  
6           What can we learn out of rural systems? And what  
7           can we learn when we study what's happening in  
8           theater of war right now?

9           I'm going to start out by just telling  
10          you a little about the American College of  
11          Surgeons, since this is a total non sequitur, so  
12          you can sort of see where, from whence really, I  
13          have come.

14          The College of Surgeons was founded by  
15          Franklin Mertin, who you can see here, around the  
16          turn of the last century. And the College itself  
17          has been rooted in quality from its very first  
18          days. The first Chairman of the Committee on  
19          Trauma, the post that I currently hold right now,  
20          was Charles Scudder who, in 1922, after noting the  
21          horrible outcomes with fractures, decided to study  
22          fractures and tried to establish standards of care

1 for fracture management.

2 He was asked -- he went to the Board of  
3 Regents of the College which had been in existence  
4 for a couple of decades by about that time --  
5 asked for this to be studied in a course. Because  
6 of his great suggestion, he was put in charge of  
7 the Committee. That Committee was called the  
8 Committee on Fractures. That Committee on  
9 Fractures evolved to the Committee on Trauma.

10 By 1923 they had published several  
11 seminal works on fractures. They had established  
12 standards of care for those fractures. And that's  
13 the beginning of our history, which goes right to  
14 this day, where even as a committee we continue to  
15 do the things that we know how to do to engage our  
16 profession and other entities -- both  
17 professional, public, and governmental -- really  
18 on behalf of trauma prevention and trauma care.

19 That vision has been carried on now -- I  
20 guess I am now the 18th chair, and our mission  
21 here is to develop meaningful programs in local,  
22 regional, national, and international arenas on

1       behalf of injury care. So we do a lot of things  
2       related to those things, to achieve these  
3       objectives -- to demonstrate leadership of  
4       development of standards of trauma care.

5                 We're obviously very focused on trauma  
6       education, developing and benchmarking and  
7       measurement tools for trauma for hospital and  
8       inter-hospital comparisons, and in-depth study of  
9       trauma systems -- which is particularly germane to  
10      this engagement. And foster and develop trauma  
11      prevention programs, and develop trauma group  
12      relations -- another important piece here.  
13      Because our relationship to the Committee on  
14      Trauma in the United States Military is  
15      extraordinarily strong, and has been for decades  
16      now.

17                We exist with a leadership component and  
18      an infrastructure -- I mean, information  
19      technology. And we focus on three main areas: on  
20      education, quality, and advocacy. And out of  
21      those three main areas, all of our work now is  
22      done. That's a recent reorganization that has

1 occurred since the time that I have been Chair,  
2 based on a strategic planning effort that went on  
3 in 2009, where we pulled all of our educational  
4 efforts into one educational pillar -- you could  
5 say ATLS. Norm McSwain is here for PHTLS, his  
6 relationship with the TCCC.

7           You can see our rural trauma team  
8 development core, disaster management, and so on  
9 down the line.

10           In quality, we took six committees and  
11 we put them together into one pillar -- very, very  
12 important, because you can see pretty quickly that  
13 the Systems Committee, the Verification and Review  
14 Committee, which verifies trauma centers or  
15 medical treatment facilities in this particular  
16 instance. EMS, Rural Disaster Prevention -- those  
17 are all elements of a system. It made sense for  
18 us to integrate them into at least one committee  
19 structure focused on quality -- the quality and  
20 the patient, the patient being at the center of  
21 the work that they do.

22           And a new advocacy arm. We have a

1 building here on F Street in Washington, D.C. The  
2 College has become very interested in  
3 appropriation of funds, of course. So, for a  
4 whole variety of reasons, the legislation and  
5 health care policy all together.

6           You can see that this information engine  
7 that drives this piece, we've just changed the  
8 name of that committee to the Quality and Data  
9 Resources Committee, that information management  
10 drives each of them. We're trying to determine  
11 what best practice is so we can teach it. Trying  
12 to develop benchmarks, so we understand what  
13 quality is all about. And trying to produce  
14 useable sound-bites, based on data, so we can  
15 advocate for our positions.

16           So information management is the center  
17 of what we do. And that's very, very important.

18           And this is an important set-up, so you  
19 can at least see the direction from which we've  
20 approached the task at hand, in evaluating the  
21 system, the JTTS and the JTS.

22           Here's just a few examples of our

1       tangible work products. These are just the covers  
2       of ATLS of the Advanced Trauma Operative  
3       Management course, the Surgical Skills course. We  
4       actually produce things. The Committee on Trauma  
5       doesn't just talk about it, we try to get it done.  
6       And that's a really important piece. We are  
7       action oriented.

8                 And I'm hoping that today's presentation  
9       will evoke action -- if not tangible action, then  
10      real debate on the topic that's at hand.

11                And this book, probably one of the most  
12      important contributions to surgical care, about  
13      the history of surgery, really a standards  
14      document that talks about structure and process of  
15      care. And we are steadily marching towards a way  
16      that we can, in an objective way, evaluate the  
17      outcomes of care. So, structure, process, and  
18      outcome.

19                I spent three years as chair of the  
20      Trauma Systems Planning and Evaluation Committee.  
21      Over that three-year period, visited either 20  
22      states or regions of the country, evaluating their

1 system of care. The first thing we had to do, of  
2 course, is to go to school to understand how  
3 systems work, what really makes sense in a  
4 functional system. What should a system really  
5 try to achieve. And it's interesting that we just  
6 heard from Admiral Mateczun that so much of it has  
7 to do with integration of that system, and how  
8 those pieces work together. And if you just keep  
9 in mind some of the final messages that he gave to  
10 us in that previous presentation, you're going to  
11 see some of those themes echo again when we talk  
12 about the integration of the system of care that  
13 exists in Afghanistan today.

14           What should a system do? Well, in 2007  
15 we re-wrote, for the College of Surgeons, our  
16 Systems Planning Guide, talking about what the  
17 optimal elements are. What I'd like you to try to  
18 keep in mind, that there are three main things  
19 that a system really should accomplish if it's  
20 going to be an effective, well integrated system.

21           It has to be able to assess its activity  
22 with regular and systematic data collection, and

1 analyze that data, and determine the status and  
2 need for intervention.

3           From there, it should be able to develop  
4 policy or guidelines, so that that policy can be  
5 put in place across the system, and there can be a  
6 uniformity of approach where appropriate.

7           And the last is to assure that those  
8 goals are being achieved, by measuring performance  
9 against agreed-upon benchmarks for that  
10 performance.

11           So, three things have to happen.  
12 Assessment, policy development, and assurance.

13           And as you can imagine, in order for  
14 there to be unity of effort, there has to be unity  
15 of command -- a lead agency in some way ought to  
16 direct that effort. This is just straight out of  
17 sort of a classic public health approach to injury  
18 care. It takes leadership, and leadership is  
19 very, very important.

20           And when we go to states and visit  
21 states, we're spending time with the lead agency  
22 in the office of EMS, or visiting Department of

1 Health, depending on where it's situated in that  
2 particular state government -- working with their  
3 leaders on those three principles. And looking at  
4 the infrastructure support to see if they have  
5 what they need to accomplish those three things on  
6 behalf of the citizens that they serve.

7           So the Committee on Trauma has been  
8 doing that work for a good long time. And I am  
9 pleased to be a part of it. And you can already  
10 begin to see at least some of my own individual  
11 biases. And I think you'll see how that really  
12 flavors what the team has come up with here, in  
13 terms of our impressions as to what's happening,  
14 and maybe what should happen in the future.

15           It was mentioned in the introduction  
16 that I had the opportunity to present the  
17 level-one verification certificate at Landstuhl.  
18 I had been at Landstuhl in 2008 as a senior  
19 visiting surgeon, was back, sort of on the way  
20 through to down-range, and had an opportunity to  
21 address their staff. There probably were 200 or  
22 so, 250 people in the room. I met Jeff Clark, and

1       it was really a very, very meaningful moment for  
2       me.

3                   At the time, Kathy Martin, who was one  
4       of the members of the team, the trauma manager at  
5       Landstuhl was there. Kathy and I first met in  
6       1989. It was her first job as a trauma  
7       coordinator, and my first job as a trauma fellow.  
8       And at the same time the current trauma chief at  
9       Landstuhl is an Air Force major named Dave Zonies.  
10      Dave Zonies was an undergraduate student at the  
11      University of Pennsylvania who wandered into my  
12      office in '92 or '93, asking to do research. He  
13      then went on to medical school at Jefferson, did  
14      his surgical training at Wilford Hall, did his  
15      fellowship at Harvard U, and was there that day,  
16      as well. So two people who I've been involved  
17      with for over 20 years.

18                   And I met Jeff Clark, who is a family  
19      medicine physician, who is the commander at  
20      Landstuhl, who happened to be an ECU graduate,  
21      from so many years ago. Jeff asked me if I would  
22      accompany him at a Purple Heart ceremony, and go

1 with him to the intensive care unit shortly  
2 following our little soiree, and watch the  
3 proceedings and be with him.

4           And I can tell you that it's an  
5 experience that I won't soon forget. This young  
6 Marine who was soon to be declared brain dead, the  
7 family had arrived, the fiancée had arrived,  
8 members of his unit were there. And you can  
9 imagine, as I listened to Jeff Clark's hushed  
10 tones, explaining the importance of this  
11 particular military honor, and thank that family  
12 for their sacrifice, how it became very clear to  
13 me how important this engagement really was.

14           And though I've given many addresses now  
15 over 20-some years, now I know that today is  
16 extraordinarily important. Because it's the  
17 difference between pinning a Purple Heart on a  
18 brain-dead warrior, or pinning a Purple Heart on a  
19 warrior that's going to return to duty, or even  
20 return -- and return functionally back to society.  
21 A really important moment. And I hope you don't  
22 mind me sharing that with you.

1           So what was our job? This presentation  
2 today is about an engagement to assess the  
3 Military Joint Trauma System that we were invited  
4 -- commissioned, if you will -- by the U.S.  
5 Central Command Surgeon. It was also sponsored by  
6 the Air Force Central Command. It was conspired,  
7 in a way, by Warren Dorlac, coordinated by Jeff  
8 Bailey, who's the JTS Director incumbent, and  
9 coordinated, as well, by Eric Kuncir, who is the  
10 JTTS Theater Director.

11           And we had to develop the sense of  
12 really what we were dealing with. All of us on  
13 the team -- and I'll introduce them to you shortly  
14 -- because of our now going on longstanding  
15 relationship with the United States Military, our  
16 active engagement, has a good sense of what the  
17 Joint Trauma System was.

18           This came right off a document, one of  
19 our briefing documents, that the vision of the  
20 Joint Trauma System is that every soldier, marine,  
21 sailor or airman injured on any battlefield, or in  
22 any theater of operations, has the optimal chance

1 for survival, and maximal potential for functional  
2 recovery -- a pretty tall order, given the  
3 complexity of the battle space.

4           What does it look like? Well it sort of  
5 looks like this. This has good to be an image  
6 that is familiar to all of you, I would think, by  
7 now. Many of you created this system that stands  
8 before you -- had a hand in either drawing it on  
9 the paper, putting it in place, a vision of  
10 adapting a civilian system to the battlefield.

11           And I like this in particular, this --  
12 again, I'll give Jeff Bailey credit for this --  
13 this chain of survival and recovery. But I really  
14 want you to take a look at that, the "continuum of  
15 care."

16           Look at all the interfaces that are  
17 there. Look at how complex a system that really  
18 is. It's about definitive care facilities, or  
19 medical treatment facilities. It's about a  
20 variety of ways of moving patients from point A to  
21 point B. These patients are the ones, certainly,  
22 that the Admiral was talking about, the very same

1 patients -- the sickest, the most complex  
2 management problems that there are.

3           It's about delivering care on the move  
4 that most of us can't even deliver when we're  
5 standing still -- across these echelons of care.  
6 Think about the challenges that exist there in  
7 getting that to actually work. And I can tell you  
8 with firm conviction that all of us know that the  
9 people who are working in each of those elements  
10 are doing everything they can to make sure that  
11 their element works correctly. Just hold that  
12 thought for a minute.

13           So our job was to try to take a look at  
14 this, and understand how well it was functioning  
15 on the basis of what we understand, and what we  
16 know about high-functioning trauma systems. They  
17 have to assess. They have to develop policy.  
18 They have to assure that those policies are being  
19 carried out. And, of course, all on behalf of the  
20 patient -- in this case, our wounded warriors.

21           So a team of "trauma system experts", if  
22 you can call us that -- visited theater to conduct

1 a trauma system review and participate in an  
2 in-theater trauma conference which was in  
3 Kandahar. That just happened to work out. We  
4 could be there for a couple of days, listen to  
5 presentations, participate, teach as well. That  
6 happened right in the middle of our excursion. It  
7 was at the invitation of U.S. CENCOM Surgeon  
8 General. And you can see the other important  
9 facets that were involved.

10 We visited Role 2, Role 3 medical  
11 treatment facilities and evacuation units through  
12 about 2 through 12 October 2011. And our job was  
13 to provide a report of those findings and  
14 recommendations to the US CENTCOM Surgeon General.

15 Busy slide -- this was the team. I was  
16 on that team. A good friend and colleague named  
17 Tom Scalea, who is the Francis X Kelly Professor  
18 of Trauma, University of Maryland School of  
19 Medicine, and Physician in Chief at the R Adams  
20 Cowley Shock Trauma Center. Tom, for years now,  
21 has been training military personnel through the  
22 CCCAT program. Everywhere you went in theater

1 with Tom Scalea, it was like traveling with the  
2 Pope, you know. Everybody knew Tom, Tom knew  
3 everybody. He's really been very, very committed  
4 and involved. He's also been a senior visiting  
5 surgeon in Landstuhl, as well.

6 Lieutenant Colonel Anne Rizzo, who is a  
7 reservist who, as you can see, is Associate  
8 Professor of Surgery at VCU, and also Vice Chair  
9 of the Department of Surgery and Associate  
10 Surgical Residency Program Director at Fairfax  
11 Hospital, and also does training at Uniformed  
12 Services. Anne was a great asset to have on this  
13 trip, with her understanding of pre-deployment  
14 training, and as someone who is part of this  
15 system.

16 Kathy Martin -- I mentioned her earlier  
17 -- who is the trauma nurse director at Landstuhl  
18 Regional Medical Center in Germany, and has been  
19 responsible for so much of the development that  
20 went on in Landstuhl, and in communication  
21 down-range as well as up-range to the VTC, and is  
22 an expert in performance improvement.

1           And Jeff Bailey was along to try to keep  
2 us out of trouble, and he did a reasonably good  
3 job at that, I would say.

4           This is the team. This is up -- it  
5 happened to be on the day that we presented the  
6 verification review certificate. And our plan was  
7 to create a strategic report -- a strategic report  
8 -- that would provide a tactical platform for  
9 future development. It became immediately clear  
10 in our briefings beforehand, and my own thought  
11 was that it certainly would make no sense if we  
12 would be proscriptive [sic] in the process, to try  
13 to tell this complex system exactly what they  
14 should do, and when they should do it, but rather  
15 try to establish beyond a shadow of a doubt what  
16 the overarching direction should be for future  
17 development and then take it from there.

18           We wanted to take a look at optimal  
19 elements -- what were the -- are the elements  
20 there that need to be there? Are those elements  
21 appropriately integrated? And how could this  
22 system be sustained moving forward -- particularly

1 if we are looking at, at least, the front side of  
2 the end of the war?

3 Okay. So, by way of background, all of  
4 you know, of course -- I can tell the context of  
5 the day, and it's hard to know in prospect,  
6 really, where to go with this presentation. But  
7 the JTTS was implemented to structure the trauma  
8 care that is in theater.

9 And the initial efforts were focused,  
10 really, on in-theater operations, and then it was  
11 expanded out to the continental United States, and  
12 to look at that as part of it, as well. And that  
13 the continuity and guidance for the JTTS would  
14 take place out of the Institute for Surgical  
15 Research in San Antonio, and that that  
16 organization would be designated as the JTS --  
17 very much a research and infrastructure data  
18 management bent to the Joint Trauma System -- with  
19 the JTTS being the deployable element that would  
20 go out first to Operation Iraqi Freedom, then  
21 Operation Enduring Freedom -- and who knows where  
22 it would go next, if it needed to go next.

1                   For all we know, it could go to  
2 Louisiana after Katrina, if we were in time of  
3 peace. Who knows where it could go next. But it  
4 would be a deployable force. Really an  
5 interesting and really groundbreaking concept.

6                   Here is what the current structure looks  
7 like. I won't take a lot of time to go through  
8 this. This is what the Joint Trauma System  
9 Directorate in 2011 looks like. It has the Office  
10 of the Director and three main divisions:  
11 Operations Division, the Support Division, and the  
12 Performance Improvement Division. It is very much  
13 an infrastructure element, as I read it -- not  
14 necessarily a leadership element, as I read it --  
15 by the way it's empowered, or by the way, maybe,  
16 that it's not empowered. It sits out there as  
17 this entity. Good to know that there's POM,  
18 there's funding for it moving forward.

19                   But still, by virtue of how it has  
20 evolved to this point, there are clearly some  
21 limitations. And let's see if we can bring those  
22 into greater focus.

1           If we take a look at this -- and this  
2 was borrowed, again, from the briefing documents,  
3 what the JTS and JTTS is all about. Through the  
4 data management, the JTS and JTTS, to sense what  
5 is going on -- right? It should also then analyze  
6 that data. It's doing that. It should evaluate  
7 what should happen next. And then disseminate  
8 information on the basis of the aggregation and  
9 evaluation into special reports, current practice  
10 guidelines, and a director's report. That's  
11 currently how it's structured.

12           Well, let's take a look at some of the  
13 overarching principles of systems theory. Let's  
14 go back out to the theoretical world for just a  
15 minute, and think about what this should do.

16           Well, we know that the elemental  
17 components are important, that they have to work  
18 well. But it's also the interaction of those  
19 components in a system that will determine how  
20 well that system is functioning. I think we heard  
21 the Admiral say quite effectively -- he said that,  
22 you know, the individual people are looking at

1 their functionality, what it is that they have to  
2 do. And they're getting their element to function  
3 optimally. But oftentimes, without realizing it,  
4 it's at the expense of the entire system, by  
5 virtue of the fact that they are functioning in an  
6 area that has very tight boundaries. And they may  
7 or may not have the awareness to know that for the  
8 system to function effectively they have to have  
9 knowledge of how the whole system works to get it  
10 to work. And that's very basic to system theory.

11 So you could have wonderful elemental  
12 function, but a system that just grinds. And it  
13 grinds at the interfaces. That's where it usually  
14 grinds. It's at the transitions.

15 And you saw on that flow that there are  
16 lots and lots of transitions.

17 Well, okay, great. What else about  
18 fundamental system policy? Well, this is from the  
19 Model Trauma Systems Planning and Evaluation  
20 document from HRSA, 2006. The College of Surgeons  
21 used this document to create its 2007 document --  
22 and it's going to be difficult to see -- this

1 wheel that talks about assessment, policy  
2 development, and assurance. Those are the things  
3 that should happen for a system to work  
4 correctly. So that not only the elements function  
5 well, but it functions at a highly integrated  
6 relational system that really optimizes care, with  
7 the patient right at the center of it.

8           Okay, let's go back to this wheel. We  
9 just showed this a second ago. And now let's  
10 change the words a little bit, so that it seems to  
11 fit with civilian systems. Because I think it  
12 helps bring the functionality into clear view, as  
13 to what is happening, and maybe what isn't  
14 happening.

15           Okay, here's the first -- well, that's  
16 assessment. Analyze and aggregate, that's a form  
17 of analysis. Evaluate, that's a form of  
18 assurance. And then disseminate is policy  
19 development. Those three functions have to be  
20 right up on the surface, so that everyone knows  
21 exactly what's happening, how it should be happening,  
22 and why it's happening.

1                   So with just slight modification, and  
2                   clarity, really, of purpose, and clarity of  
3                   concepts, you could see how the Joint Theater  
4                   System, the Joint Trauma Theater System, and the  
5                   Joint Trauma System superimpose quite nicely with  
6                   the fundamental principles of a public health  
7                   approach to a trauma system or regional integrated  
8                   system.

9                   Okay. Well, this is not supposed to  
10                  sound like what we did on our summer vacation.  
11                  It's not. But this was the flow of care.

12                  And we started out here -- so we went  
13                  from Ramstein over to Bagram as our first leg of  
14                  the journey, and visited some of the facilities  
15                  there. I'll show you that in a second. Then we  
16                  went from Bagram to Bastion, and then traveled,  
17                  sort of at break-neck pace, Bastion to Tarin Kowt.  
18                  Then from Tarin Kowt over to Kandahar, and spent  
19                  time in Kandahar, both at the MTF there, as well  
20                  as in conference for a couple of days, which was  
21                  very valuable because we heard lots of different  
22                  individuals of the system presented. And then from

1       there, headed back to Bagram, and then from there  
2       back to Ramstein.

3                   We -- the flow of things, when we had  
4       "down time" -- and there wasn't much -- we were  
5       either operating, rounding, meeting with care  
6       providers, meeting with leaders. When we weren't  
7       doing those things, we were preparing this brief.  
8       We were discussing what it is that we saw, what  
9       are the things that we -- which were transferable  
10      from our own experience and knowledge base. What  
11      was working well, and what wasn't working well.  
12      And we began to try to frame out this report, and  
13      decide how we were going to put our  
14      recommendations together.

15                   You could see we, while we were at the  
16      individual locations, we did max out our  
17      experience. So, seeing not just the medical  
18      treatment facilities, but also the sort of  
19      in-transit units, the MERT units. We saw PEDRO,  
20      the Fever-Ops, Weasel-Ops. We really met with a  
21      whole host of providers across the system. And  
22      short of seeing, really, Role 1 facilities and

1 being at point-of-injury, which wouldn't have been  
2 a good place for us to be, we feel like we got a  
3 really good experience in understanding how this  
4 system worked.

5           Nothing is more telling than when you  
6 can sit at a picnic table with six or eight care  
7 providers and let them just tell you what they  
8 think. And it really helps explain, it really  
9 helps crystalize what the fundamental issues are.

10           And I can tell you that if you look down  
11 this cascade, it was very hard for us to find much  
12 that really truly unified each of these elements  
13 -- except for one thing: the patient.

14           When we talked with people about what  
15 they thought was happening down-range, or what  
16 they thought was happening up-range, believe it or  
17 not, there was a paucity of true knowledge as to  
18 what was really going on in these other areas.  
19 What they weren't short on was their feeling about  
20 what was happening. And it wasn't always  
21 positive. There was, I think a good measure, from  
22 point, some acrimony that existed between what,

1 maybe, was happening at a Role 3 facility and what  
2 happened at the Role 2, and what was going on down  
3 in Landstuhl.

4           Again, the cohesion and communication  
5 really wasn't what we would have hoped it would  
6 have been -- despite the fact that the people who  
7 were doing this were -- are doing a phenomenal job  
8 at what they do, at every point along the way.  
9 Whereas there maybe was great cause for  
10 celebration at the successes, a lot of the  
11 providers lived in that 10 percent of life that  
12 needs to be improved, as opposed to the 90 percent  
13 which we saw, as outside observers, was phenomenal  
14 as to what they were doing.

15           And I'll give you some examples of that.  
16 And here it is. I mean, it was obvious that at  
17 the elemental component level, there was committed  
18 leadership -- very committed. Leadership wasn't  
19 always completely informed as to how the whole  
20 system worked, but they were totally committed to  
21 making sure what happened in their zone was  
22 happening exactly as it should happen to optimize

1 the care.

2 The clinicians are committed. Totally.  
3 Even to the point of sacrificing their own health  
4 by virtue of how hard they work on behalf of those  
5 patients. We saw a trauma chief, trauma czar at  
6 Bagram, who essentially had moved into the  
7 hospital. You know, he just decided to billet in  
8 the ICU. That's where he was. He responded to  
9 every single trauma alert, and his commitment was  
10 six months. Every single admission. Am I  
11 overstating that? Six months -- right? Every  
12 one.

13 We saw it time and time again. The Role  
14 2 facilities. It doesn't matter, day and night,  
15 it might be two surgeons, somebody comes in,  
16 they're both going to go to work. Because they  
17 care as much about that patient, and more about  
18 each other, than they do about themselves. It was  
19 phenomenal to see it. The teamwork was  
20 incredible.

21 And you could see, with some of the  
22 things -- I need not tell this group some of the

1       developments that have come out of this. You  
2       know, I did my early work in damage control.  
3       They've taken the damage control surgery and  
4       damage control resuscitation to a whole other  
5       level that we're now all emulating in civilian  
6       life and civilian care.

7                Reorganizing the ABCs, to start with  
8       catastrophic hemorrhage, the use of tourniquets.  
9       I think Jay Johannigman was probably the first one to  
10      get tourniquets for his EMS squads in Pennsylvania  
11      -- excuse me, in Cincinnati. Probably the first  
12      one in the United States.

13              And, of course, we sat and learned, in  
14      awe, this thing about multi-drug resistant  
15      microbes, and what's happening with infection  
16      control and infection management. It's superb  
17      work.

18              And those are just a few examples. What  
19      wasn't obvious to us was that there was a fully  
20      integrated infrastructure for the system to  
21      support all that work. And we did not see,  
22      really, a true lead agency, if you use a public

1 health approach, that would knit this all  
2 together. That's what clearly isn't -- is there  
3 great leadership at the JTTS level in theater?  
4 Yes. Excellent leadership. Is there the  
5 authority to really implement policy, measure  
6 outcomes, across the system? Not really.

7 Is the infrastructure for informatics  
8 and data management what it needs to be for every  
9 step? Not really. Pieces.

10 I'm sure you can think about  
11 conversations that you've had in this room or  
12 rooms like this, where you'd say, Gee, I wish we  
13 had more data on that. How much data do we really  
14 get out of the pre-hospital, the en-route care  
15 people? It's not there. It's not there because  
16 the infrastructure isn't there. The people who  
17 are doing the care have to enter the data. And  
18 they do what's most important. They take care of  
19 the patient.

20 So, the infrastructure, is it really  
21 what it needs to be? Is there a lead agency that  
22 is really squiring this appropriately? Well,

1       there's a lead agency probably willing but, again,  
2       the structure isn't there to do it.

3               So, look -- you know, when I created  
4       this image, the first thing I put up there -- and  
5       it just looked so silly up there I took it down,  
6       but I'm going to. The tail will not wag the dog.  
7       There are priorities here. We get it. You know,  
8       even as a group of civilians, we're smart enough  
9       to know that the war fighters really are in  
10      control of the battle space, that they really  
11      require ultimate flexibility to do what they need  
12      to do to win the war. Got it. Understood. Top  
13      priority.

14              But I have to believe that everybody in  
15      this room also believes, similarly, that our war  
16      fighters deserve absolutely the best that we can  
17      give them in terms of a systemized approach to the  
18      care.

19              That means that that approach to care  
20      has got to be responsive, it's got to be nimble,  
21      it's got to be able to adjust to the tactical  
22      situation. It has to overcome distance, time,

1 geography -- whatever is in its place. Which  
2 means it's going to be a complex system that will  
3 require resources. Both of those are not mutually  
4 exclusive. What they have in common is they both  
5 require resources to achieve both of those.

6           So if we think they're important, and  
7 they're both equally important -- or near equal  
8 importance, because I know fighting the war is the  
9 most important thing -- it's going to require  
10 resources to take this system to the next level.

11           All right. So, out of all that  
12 preamble, now we get a little bit to the  
13 laundry-list piece. And I'll try to not read  
14 these slides but, rather, give you examples as we  
15 go through.

16           We decided to comment on other six  
17 areas, not to give this Board, or the Surgeon  
18 General a list of 500 recommendations, but rather  
19 six areas of focus.

20           The first is in authority. And you've  
21 heard me talk about this. You know, we really  
22 realized that the JTS really had no authority to

1       develop or set policy or standards for trauma  
2       care. They can develop them, they just can't  
3       implement them uniformly across the system,  
4       without a lot of cajoling that goes on. It's a  
5       multinational, multi-service force. Unity of  
6       effort requires unity of command. I don't think  
7       it could have been said better, and I'm glad that  
8       it was said just before I got up here.

9                There's really no authority to implement  
10       a verification process for the facilities or for  
11       the system itself. Each of the medical treatment  
12       facilities ought to exist on a set of standards.  
13       There's no way to verify that they do or do not.  
14       The American College of Surgeons does that for  
15       civilian centers. We did it at Landstuhl. That's  
16       not to say we're going to do it in theater, but  
17       the United States Military has to think about that  
18       -- what standards should be in place for the Role  
19       facilities, and how can they be verified?

20               And it's obvious the JTS does not really  
21       function as a DoD asset. It doesn't function up  
22       at that level. And its scope of responsibility,

1       it would seem, should mandate, in some way or  
2       another, or be aligned more appropriately within  
3       the DoD, so that it can function more effectively  
4       as what I would call a lead agency. And if the  
5       JTS was established as a statutory lead agency at  
6       the DoD, and it had authority to set policy and  
7       enforce standards, conventional wisdom in and  
8       around system theory, you would say that the care  
9       would even improve further from where we are now.

10                So there should be also DoD-delegated  
11       authority to recommend external system review so  
12       not only the medical treatment facilities can be  
13       reviewed, but the system can be reviewed, as well.  
14       And it becomes part of somebody's responsibility  
15       to be certain that both the system and the  
16       centers, both the medical treatment facilities and  
17       the JTTS are functioning along -- at a certain  
18       level.

19                So -- recommendation: the JTS should be  
20       elevated within the DoD in order to align its  
21       position with its joint and global  
22       responsibilities.

1           Now, there may be -- there are probably  
2       tons of ways to do that, but I'm not going to  
3       begin to understand. But I hope it at least  
4       really stimulates a discussion as to what really  
5       should be done to unify command and to unify the  
6       effort.

7           All right, what about communication and  
8       cohesion? Well, you know, it's interesting -- you  
9       know, it's funny -- these military providers,  
10      they're actually human beings. They actually want  
11      to know what's happened to their patient after  
12      they've taken care of them. They want to know  
13      what happened when they got back to Landstuhl,  
14      what happened when they went to CONUS, what  
15      happened when they went to the Role 3 -- they want  
16      to know.

17           It's the same thing for pre-hospital  
18      providers -- right? We have pre-hospital  
19      providers who bring us patients. They just want  
20      to know how the patient did. Communication around  
21      the patients and outcomes to providers across the  
22      system is critical, and it's not happening. It's

1 not happening primarily because, you know, there  
2 isn't a good way to do it.

3           Certainly the medical record doesn't do  
4 it. That's the next bit of the story. I'll get  
5 to that in a minute. The medical record really  
6 doesn't do it. They've resorted to work-arounds,  
7 frequent work-arounds, where they'll use texting,  
8 they'll use e-mail. They'll try to ring somebody  
9 up on a cell phone or a DSN line to find out  
10 what's happening.

11           And, you know, no news is generally bad  
12 news. No news either means, well, maybe I didn't  
13 do what I needed to do and things didn't go well.  
14 Or no news means that maybe there's something,  
15 some other -- there's got to be communication.  
16 And that should try to lead to cohesion in some  
17 way or another.

18           And it's interesting, you know, even to  
19 the point where because of a lack of clear  
20 understanding-- let me give you an example. This  
21 is bullet-point number three. Clinicians  
22 encounter resistance when attempting to transfer

1 patients.

2           So, in Kandahar at the moment, it's my  
3 understanding that there are efforts that are  
4 being made to push the civilian health care back  
5 to the population -- okay? Back to the civilian  
6 population. So that's resorted [sic] in, you  
7 know, a shift in the style of care now at  
8 Kandahar. So if you have somebody who has a  
9 Glasgow coma score less than 8, as opposed to a  
10 full-court press -- this is an Afghani national --  
11 as opposed to a full-court press, putting an  
12 endotracheal tube, basically those patients are  
13 being sent to a civilian hospital.

14           Well, what happens in Tarin Kowt if, in  
15 Tarin Kowt the surgeons there encounter a patient  
16 who has a GCS of less than 8? And they're just  
17 not quite up to speed that things are shifting.  
18 They're going to intubate that patient and call  
19 for transfer. And that happens. We saw -- we  
20 heard of an example of that -- on both sides,  
21 because we got to talk to both parties around it.

22           Well, actually, you know, both

1 individuals were doing their job. Totally doing  
2 their job. But can you imagine the conflict at  
3 the interface? Well, what did you do that for?  
4 Why did you intubate? You want to do what? Well,  
5 we're not doing that right now. Nope, you're  
6 going -- and they're left, at the Role 2, holding  
7 the bag. And you can see example after example  
8 after example.

9           There has to be some unifying thread  
10 that comes from somewhere to make sure that  
11 everybody is on the same page -- right?

12           Now, there may be things going on in  
13 Tarin Kowt that -- you know, in terms of  
14 negotiating with the locals, a little different  
15 than it happened at Kandahar. That's the case, as  
16 well. So some of the, as you would expect, the  
17 unevenness, which is fully justifiable, and sort  
18 of in the war effort, balancing, in essence, the  
19 politics, the humanitarian mission, the combat  
20 mission -- that's going to lead to some of those  
21 imbalances.

22           But you can see how, with better

1 communication, with clear visibility on where the  
2 different elements are in the system, that a lot  
3 of the issues around communication and cohesion  
4 could be smoothed out.

5           So we have a couple of recommendations.  
6 I mean, clearly, the current in-theater director,  
7 Eric Kuncir, has taken efforts to try to work  
8 through this by communicating with the trauma  
9 chiefs at the various facilities, via e-mail and  
10 via conference call. The video teleconferencing  
11 and the video trauma conference of ETC has  
12 morphed. It's no longer as much of a performance  
13 improvement forum as it was when it started -- as  
14 to really, now, a communication forum.

15           And it would be very helpful if there  
16 was more healthy exchange of intellectual content  
17 across the system. And, again, it's well  
18 understood that the mission there is to fight the  
19 war and care for the wounded, not to sit around  
20 and conference all day. But something has to be  
21 done to continue to address the second issue, to  
22 improve communication and cohesion.

1           All right -- informatics. There's no  
2 unified, contiguous electronic health record  
3 across the military continuum of care. That can't  
4 be news to anybody in this room. Can't be.

5           When I was there in 2008, when I was in  
6 Landstuhl in 2008, the old GIPTA, quite frankly,  
7 was more functional than what's in theater right  
8 now. It's a source of tremendous frustration. So  
9 you could be a Role 2 facility, have three  
10 patients come in. You could be operating for six  
11 to eight hours. Each one of those patients, to  
12 get them out of your facility, it's going to be 45  
13 minutes of computer work to get -- that's 45 times  
14 three -- to get them out of that facility. And  
15 the medical record -- and I saw it -- it's like  
16 one big Word document. It is not usable.

17           So what do they do? Work-arounds.  
18 Again. Try to find a way to transmit the  
19 information when they can. And the sad part about  
20 it is that from time to time people get used to  
21 just not having it. Say, I just received the  
22 patient at Landstuhl. What happened? Well, we're

1 not really sure. Well, why not? 'Cause you can't  
2 really find out. Tried to call. Didn't get the  
3 e-mail. It's gone backwards, not forwards, from  
4 where I saw it in 2008. Something should be done  
5 to address it.

6 In addition, if we shifted the medical  
7 record to aggregation of data -- I alluded to this  
8 earlier -- there's a limited capability for  
9 consistent collection of data across the system.  
10 There's a lot of sampling that's going on, but  
11 there isn't really consistent collection at every  
12 step of the way. And that really limits  
13 performance improvement. Whereas the performance  
14 improvement efforts -- they do exist within the  
15 different elements. They're pretty spotty.  
16 They're highly variable. And part of the problem  
17 is that the information just isn't there.

18 So this recommendation about developing  
19 an EMR, that's obvious. There ought to be  
20 additional resources to allow concurrent data  
21 collection across the continuum, and that needs to  
22 be really brought again as a consistent stream

1 through each of the elements. And then the JTTR  
2 itself should be enhanced for -- to be capable of  
3 real-time performance improvement -- in an ideal  
4 setting. And this will require a lot of effort.

5 The providers on the ground ought to be  
6 able to have access to their data so they can see  
7 what's happening. At the moment, that capability  
8 doesn't exist.

9 That's a logical transition to  
10 performance improvement. As I've mentioned, the  
11 performance improvement efforts are there element  
12 by element, but pretty spotty. And sometimes  
13 pretty rudimentary, as well. Pretty simplistic.  
14 Not really as sophisticated as they really could  
15 be if these units were resourced up and had the  
16 information that they needed to intervene as they  
17 needed to intervene, either on a CPG -- which  
18 maybe you could consider a (inaudible) management  
19 guideline that is JTS- implemented as a  
20 non-discretionary guideline because it's  
21 implemented by the system. But then each  
22 individual element ought to have discretion, too,

1 to look at the issues that are important to them,  
2 or discretionary CPGs that they could develop.  
3 So, performance improvement is key.

4 We've already talked a little bit about  
5 the communication piece.

6 And the last bullet that's up here is  
7 incredibly important. At the end of the day,  
8 successful performance improvement, in large part,  
9 is built on trust. It's also built upon  
10 agreed-upon benchmarks. People have to know what  
11 the target is so they can hit it. And the targets  
12 should be developed in consensus across the  
13 system, so it doesn't just come down from on high,  
14 but the providers that are involved are helping  
15 determine what those benchmarks are.

16 And we've been at war long enough now  
17 that, based on your historical data you could  
18 easily determine what appropriate benchmarks  
19 should be for whatever it happens to be, whatever  
20 the particular element audit-filter is in a  
21 performance improvement process.

22 So what do we do? Well, we would

1 recommend an overarching PI plan and patient  
2 safety program. Somebody should sit down and  
3 write one. This is what it's going to look like  
4 for the system. Somebody should sit down and say  
5 what they should like for the Role 3 facilities,  
6 for the role 2 facilities, for the fixed-wing  
7 transports, or for the rotor craft transports, and  
8 pull that together into some plan.

9           And a clear, clear strategy for  
10 system-wide processes. Event identification, ways  
11 to put corrective action plans, and close all  
12 those loops should be put in place.

13           A lot of activity is going on right now.  
14 There's no question about it. It just isn't  
15 really well coordinated. And, of course, at some  
16 point somebody has to be held accountable for  
17 achieving those benchmarks. And that's as much a  
18 leadership issue as it is anywhere. And maybe  
19 that leadership starts here. I don't know. You'd  
20 have to tell me.

21           Okay -- clinical investigation. Well,  
22 the amount of research papers that have come out

1 of this conflict have been prolific. My count is  
2 somewhere in excess of 500. Does anyone know  
3 those numbers? Dr. Rasmussen? In excess of 500?

4 When I was in theater -- when I was at  
5 Landstuhl in 2008, there were 280-some papers. In  
6 the last two years, there have been another 200.

7 And I can tell you that this is  
8 happening primarily by brute force. Because  
9 despite the fact that we have an Institute for  
10 Surgical Research, there are other elements in  
11 theater that, in essence, that modulate, if you  
12 will, the IRB process. There are multiple databases.  
13 And there is a fundamental confusion  
14 around what is performance improvement, and what  
15 constitutes performance improvement, and what  
16 constitutes true research.

17 So, from the time you decide to put a  
18 proposal in for research for approval to the IRB  
19 could be six months, and you could be already, you  
20 know, out of theater by the time the thing comes  
21 back to you.

22 So this process really needs to be

1       streamlined. And with the way the hierarchy is  
2       set up, as far I can tell, there's no really clear  
3       indication that JTS or JTTS really is, at the  
4       highest executive level, determining what should  
5       go through, in terms of research, and what  
6       shouldn't go through -- at least for Wounded  
7       Warriors. And it's understood that the research  
8       effort is much larger than that.

9                 And so, really, a couple of  
10       recommendations. That the performance improvement  
11       and research missions and the proposal process  
12       somehow must be reconciled so that it allows for  
13       much better, much clearer, unencumbered  
14       investigation. The whole IRB process really needs  
15       to be streamlined significantly. And those  
16       requests for clinically important data relative to  
17       Wounded Warriors -- again, if you believe in this  
18       lead agency concept -- really ought to be vetted  
19       and cleared through the Joint Trauma System as the  
20       lead agency. At the moment, that's not really the  
21       way it works.

22                 And then the last area -- pre-deployment

1 training. We know that there is clear variability  
2 across the system. And there's no question about  
3 that, that the training that is in place pre-  
4 deployment is largely focused on combat skills and  
5 that in an ideal setting, you'd like to have  
6 tactical matching that occurs between the clinical  
7 expertise and the deployment assignment. And we  
8 know that that's not always happening, as well.

9           So, again, the JTS doesn't really have a  
10 lot of influence over that pre-deployment  
11 training at the moment. And it would be ideal if  
12 JTS did have some authority, for at least the  
13 trauma- specific training that takes place.

14           So -- recommendations? You know,  
15 improve that balance in pre-deployment training  
16 between combat skills and trauma training. Try to  
17 have better specialty alignment, the skills that  
18 are needed. Scale the training to combat casualty  
19 care and system experience, knowledge, and skill.  
20 That's important, as well.

21           The trauma directors at every Role 3  
22 facility need specific training, not just about

1 their facility but also about the system so they  
2 understand the system more clearly.

3 And, again, the JTS should have  
4 oversight on standards of that pre-deployment  
5 trauma component for the training.

6 Team transition -- again, (inaudible) is  
7 also important to each theater of operation as a  
8 unique role. Each facility is in the specific  
9 area of training.

10 If you just look at what the Brits do to  
11 prepare their surgeons to go to Camp Bastion,  
12 their providers to go to Camp Bastion, it's pretty  
13 riveting. Their deployments are short -- about  
14 two months. They go to Birmingham for six to  
15 eight weeks before. In Birmingham they have a  
16 facility that's set up exactly like Camp Bastion.  
17 And their personnel hit the ground in Lashkar Gah,  
18 they can pretty much walk the halls with  
19 blindfolds on. A lot different than what we do  
20 to, say, a Navy orthopedic surgeon who's finished  
21 his residency training six or eight months before,  
22 and the only other scary place he's ever been is

1 when he went away to college. And now he's in  
2 Helmand Province.

3 So there's opportunity, no question --  
4 opportunity to improve the training. And to  
5 develop a better information exchange when these  
6 people hit the ground.

7 This first recommendation is about  
8 Develop a manual or (inaudible) repository of  
9 updated institutional information, and that  
10 there's some organized hand-off that occurs. And  
11 right now, the hand-offs are pretty variable.

12 So we've hit six main areas, and that  
13 talk about the need for strategic and tactical  
14 development moving forward, to improve the care or  
15 the system, to have it function as a much more  
16 highly integrated and sophisticated system.

17 That is not to say that the care on the  
18 ground isn't what it needs to be. I think it's  
19 very hard to make those kinds of outcomes  
20 assessment in terms of how that care is developed.  
21 There's great opportunity for ongoing development.

22 So our conclusion? You know, it's that

1 really support should be rendered across the  
2 Uniformed Services, across civilian leadership in  
3 the DoD, for some fundamental change in the  
4 structure that exists that enables the JTS to  
5 really function as a lead agency using a public  
6 health model, so that assessment, policy  
7 development, and assurance can take place.

8           And the way to move this forward could  
9 well be -- it's going to be to get commitment, and  
10 look to transform this system to the next level,  
11 and to transform it in a way that it can be  
12 sustained.

13           So here are where the key commitments  
14 would be needed. In leadership and communication,  
15 in education and training, and performance  
16 improvement and clinical excellence and  
17 investigation. And all the potential is there.  
18 There's no question about it. It's just a matter  
19 of whether there's a cultural shift. There's that  
20 word again. It came up in the previous talk --  
21 whether that cultural shift can take place to move  
22 this forward so that it can be sustained, moving

1 ahead.

2 A redesign of the system, with oversight  
3 by the Defense Health Board, with  
4 command-and-control with JTS as the lead agency.

5 A clear culture -- defining that culture  
6 -- both in war as well as in peace. Even if this  
7 thing is totally ramped up, it's brought right to  
8 where it needs to be, what happens in January of  
9 2015? Does it go sit on the shelf and collect  
10 dust? Or have we had enough foresight to think  
11 about what would have to happen in times of peace,  
12 so that this would become a readily deployable  
13 asset that would be functional, really at a  
14 moment's notice?

15 Again, still under culture, focus on the  
16 joint interdependence. And in terms of the  
17 authority, the jointness is going to be very, very  
18 important. It's a very important piece when  
19 you're dealing with a multinational and a  
20 multi-serviceforce.

21 We, on behalf of the College of  
22 Surgeons, are willing to assist in continuing

1 with developing the appropriate culture, so that  
2 the civilian -- there's ongoing civilian  
3 commitment to this, as well, in whatever way  
4 civilians are needed.

5 We've talked about defining the  
6 authority, the role of the JTS director, what the  
7 reporting structure should be in jointness. We  
8 talked about that as one of the principal issues  
9 in need of resolution.

10 And there should be investment for the  
11 future. And you can see what some of the factors  
12 are there. And we need to think about how we can  
13 continue to optimize capabilities for current JTS  
14 systems that are in place, and for current JTS  
15 operations, as well.

16 The goal, of course, to make sure that  
17 our Wounded Warriors get absolutely the best, and  
18 they end up at the right -- that we get the right  
19 patient to the right place at the right time, and  
20 they get absolutely great care.

21 So why should the JTS lead? Why should  
22 JTS take the lead in this? And this is something

1 I lifted right out of our report -- is that, you  
2 know, it's clear that the military medical  
3 commanders at all levels are excellent leaders.  
4 And they're focusing on their facilities, and  
5 they're facilitating the work of the JTS as they  
6 know, as best they know.

7 But they come from a wide variety of  
8 backgrounds, and they have a wide skill set.

9 It's got to be that the JTS, that  
10 excels, really, at the current state of trauma  
11 care, that should be one part of this organization  
12 that always is expert in managing trauma systems.  
13 And they should be an enduring force in managing  
14 those systems. They've got the corporate memory  
15 of all the health care teams that have been  
16 deployed and re-deployed. They have the most  
17 current and comparative historical trends. They  
18 have all the versions of the clinical practice  
19 guidelines.

20 They're perfectly positioned to function  
21 as this lead agency, if given the proper authority  
22 to do so.

1                   So what next steps would we recommend?

2                   Well, under the leadership of Brian Eastridge,  
3                   this Joint Trauma System Development Conceptual  
4                   Framework and Optimal Elements document is near  
5                   ready for publication. This is a spinoff of a  
6                   2007 Optimal Elements document for civilian  
7                   systems.

8                   We expect to have this completed by  
9                   January, February of this coming years, and  
10                  approved by the Board of Regents of the American  
11                  College of Surgeons. It would come out as an  
12                  American College of Surgeons document that was  
13                  created by members of the United States Military  
14                  with the imprimatur of the College, to help  
15                  memorialize this great work that has been done.  
16                  And it's an important piece of work that will  
17                  hallmark the events that have occurred over the  
18                  last 10 years -- much of that work done by many of  
19                  the people in this room.

20                  We would recommend that a JTTS  
21                  operations field manual be created. Something has  
22                  to be created that you could have access to,

1        hopefully, a living, breathing, document that's on  
2        the internet, secure, that would tell somebody in  
3        10 years how to pick up, if necessary. Better  
4        still, there would have been development over the  
5        next 10 years, even if it's in time of peace, and  
6        there would be training, and there would be  
7        drilling that would go on as to how to deploy  
8        these systems.

9                    But that manual which, in essence, would  
10       bring together all of the current, you know -- the  
11       CCAT protocols, the FST set of protocols, the  
12       Role 3 requirements -- they're brought together  
13       into some virtual shoe box so they're all in one  
14       place, and that the appropriate connectors are set  
15       up, at least they're captured. That would be  
16       important, and that hasn't been done yet.

17                   And then we would recommend that if you  
18       believe in the recommendations, the strategic  
19       recommendations in the other areas, that a  
20       tactical implementation plan be created to try to  
21       achieve each of those recommendations over time.  
22       And we've just said, well, you know, how about

1 something for immediate six months, intermediate  
2 18 months, and 36 months long term, where you look  
3 at those six areas -- and it would make sense to  
4 me that the current JTS structure could create  
5 that plan. They have to be resourced to do that.  
6 They have to be supported to put those tactical  
7 recommendations into place, those tactical steps  
8 into place. But this is the call for action.

9 At some point, if none of this is new  
10 information to this Board, at some point somebody  
11 has to decide that they're going to move this  
12 forward. And what better time than now?

13 So, this last bullet to create some sort  
14 of tactical implementation plan to try to carry  
15 this out.

16 There were a lot of people that worked  
17 hard to pull this together, and they need to be  
18 recognized. And, honestly, it's those individuals  
19 and those units, and the people who work in them  
20 every day, who are the true heroes. It's  
21 breathtaking what they do. And I can't tell you  
22 how the experience of seeing them at work, and

1 operating with them, and listening to them, how  
2 personally life-changing it has been.

3 And I hope that this work has impact to  
4 honor their efforts by moving this system forward.

5 So, with that, I'll stop. And,  
6 hopefully, we've kept everybody awake at the last  
7 session of the day. And hopefully, you're  
8 stimulated to have many comments and questions and  
9 discussion.

10 Thank you.

11 DR. DICKEY: Thank you very much for  
12 that very complete presentation.

13 Dr. Carmona? Question?

14 DR. CARMONA: Thank you. Just a couple  
15 of comments. Mike, I'm proud to say that I knew  
16 you back in the old days, when you were just a  
17 youngster starting out. You have done us an  
18 extraordinary job. I think you've elevated the  
19 stature of all of us trauma surgeons. Because  
20 before you, I think a double-blinded study was  
21 just two surgeons trying to do something.

22 (Laughter.)

1                   And you've done an extraordinary job  
2 here. And what I'm really impressed with is the  
3 degree of diligence, due diligence, that you've  
4 done. I mean, it's easy to just check the boxes  
5 -- yes, we know what the Committee on Trauma, as  
6 far as a level-one trauma center. But you went  
7 far below that, to most granular surfaces of  
8 leadership, of the relationships.

9                   And, as you know, I was down there in  
10 August just before you, and every one of your  
11 comments was spot on. And I think many of us who  
12 follow that, understand, as well.

13                   One issue that I didn't hear from, that  
14 I saw come up repeatedly is the relationships we  
15 have with our allied forces. And I never thought  
16 of this until I actually started witnessing it in  
17 the M&M conferences -- and the different way that  
18 they do certain types of surgery, their  
19 damage-control surgery. And some of the  
20 challenges of complications that we saw coming up  
21 from down-range that were really based on  
22 different best practices from our allied surgeons.

1                   So maybe you could comment on that also.  
2       Because it's a unique clinical challenge, as well  
3       as a diplomatic challenge, to make the appropriate  
4       changes.

5                   DR. ROTONDO:   In that regard, one thing  
6       I learned when I was there was not to rush to  
7       judgment.

8                   So we're in Landstuhl at the VTC, and  
9       I'm hearing about a patient who has -- he's a  
10      triple amputee, and has a horrible perineal  
11      injury.  And the Brits at Bastion decided to do an  
12      exploratory laparotomy, and do bilateral sort of  
13      common and -- common iliac artery control.  And  
14      they actually looped one of them off, and it was,  
15      What the heck are they doing?  You know what?  It  
16      didn't make any sense to me at all -- until I got  
17      to Bastion.  And then I started listening -- well,  
18      they don't have angiogram.  What would I do in  
19      that situation?  I'd run the angio -- right? --  
20      try to do something to distally anembolize.  They  
21      can't do that.  They stop the bleeding.  It's  
22      pretty proximal, it's pretty scary.  It's

1 non-conventional. It's not what we would do. But  
2 you know what? It made sense when you talked to  
3 them.

4           So I think that's an example of an  
5 aha-moment -- you know, for me -- saying, well,  
6 there's a lot to be learned here. They may be all  
7 wrong, you know, but in the moment, it sounded  
8 right.

9           So I think it's a matter of  
10 communication and cohesion, and doing better data  
11 collection to determine what the outcomes are.  
12 And to making sure we have an effective  
13 performance improvement system that crosses  
14 cultures. That's going to be very difficult -- so  
15 we can really talk about what it is that's  
16 happening. Not name 'em, shame 'em and blame 'em,  
17 but really talk about what the best way to  
18 approach these injuries.

19           I think we have a lot to learn from our  
20 international colleagues.

21           DR. DICKEY: General?

22           MAJ GEN TRAVIS: I was going to thank

1       you also. From my perspective as an Air Force  
2       Deputy SG, I know my boss would thank you, too.  
3       We've read your report. We take it to heart.

4               I'm sorry Dr. Woodson's not here, but I  
5       expect he would say the very same thing.

6               I think -- excuse me, I'm losing my  
7       voice -- I thank the whole team for going, first.  
8       Take the time, putting yourselves at some risk to  
9       do that, to help us focus on many things we do  
10      know, and have known, that are wrong, or that  
11      could be done better.

12              I think the incredible level of success  
13      which you witnessed, which we've kind of grown in  
14      this conflict, or in this long war, many of  
15      those things are happening in spite of --

16              DR. ROTONDO: Correct.

17              MAJ GEN TRAVIS: -- what we've set up  
18      for folks. And we have to do it better.

19              Now, I think this is really good timing.  
20      You could say, well, gosh, I'd wish we'd known  
21      some of this before. We've known some of this  
22      before.

1                   But on the other hand, a very thorough,  
2                   systematic, and systems-level approach you've  
3                   taken to your review, I think is perfect timing as  
4                   we do, you know, thankfully and hopefully, start  
5                   winding down this conflict. Because this is an  
6                   opportunity, I think, to focus our minds on making  
7                   it better. And, as you put in your -- and I was  
8                   glad you did -- sustain it for the future.

9                   And so as this perhaps contracts, as we  
10                  start bringing folks home -- and we're out of  
11                  Iraq, effectively, pretty much as of last week.  
12                  Folks at 332nd Expeditionary Med Group, you know,  
13                  pulled out their hospital. The last of them left  
14                  last week -- which was a real, Wow. Exactly. So  
15                  -- and here we go.

16                  So I met with Tom Scalea up at Baltimore  
17                  Shock Trauma a few weeks ago -- he spoke with  
18                  great heart and appreciation for the visit, and  
19                  the trip, as well -- and heard his comments.

20                  But I would -- the comment I'd made to  
21                  him that I would make to you -- and I made it to a  
22                  lot of the folks that are up there in that area --

1 are: you'd think perhaps some of this just kind of  
2 needs to slowly fade away as we come down from  
3 this war. I would tell you the exactly opposite.  
4 And I know you understand this.

5           It's at Baltimore Shock Trauma one of  
6 our C-STARS platforms where, you know, St. Louis,  
7 Cincinnati are the other two where the Air Force  
8 does trauma training to get people ready. And,  
9 you're right, he knows a lot of folks that he's  
10 trained over the years from our team. I think  
11 those partnerships, and the kind of efforts you  
12 describe actually become more important because  
13 you can't predict the next war, or the next  
14 opportunity, even if it's not a war, where our  
15 skills and our system are going to be needed.

16           And so I thank you very much for  
17 focusing our minds. And I guarantee you have our  
18 commitment -- and I'll speak for the Air Force,  
19 and I'm sure the other Services agree -- you know,  
20 working with the ISR, and working with the JTS,  
21 and working with Health Affairs at the right level  
22 to try to commit ourselves to improving many of

1 the things that you've talked about.

2 Frankly, we have to do that anyway.

3 Because the things that we improve for care  
4 deployed in that wartime also helps us here.

5 And so thank you very much, and I do  
6 appreciate it.

7 DR. ROTONDO: Well, I appreciate those  
8 comments. You know, one thing I've learned,  
9 particularly going and making this visit at this  
10 point in the effort, is that people get nervous  
11 and anxious when the war starts, and they get  
12 nervous and anxious when the war ends. They  
13 really do.

14 There's concern right now as to how the  
15 draw-down will occur. On the one hand, Well, how  
16 am I going to manage tomorrow? There's that  
17 concern. And then there's this concern of how are  
18 we going to manage 10 years from now.

19 So, you know, really taking advantage at  
20 this point in time, I think is an outstanding  
21 point.

22 The other thing I'll say is that I

1 really was concerned that this would just sound  
2 like a big call for resources. They just need  
3 more money.

4 I think it's really a time for aligning  
5 and integrating. When I listened to Captain  
6 Hammer's discussion this morning about  
7 neurotrauma, that's just the JTS, as I see it.  
8 It's 800 to 959.9, most of the ICD-9 codes for  
9 injury. That effort could be superimposed -- with  
10 the energy that he's bringing to that, and the  
11 expertise and what he's done, from what I could  
12 learn today in such a short period of time -- why  
13 not be able to bring that in in some integrated  
14 fashion.

15 And I bet you there are 10 other  
16 examples that this group would know of, that I  
17 would never know of, where forces could be --  
18 greater force could be brought to one point, which  
19 is to move this forward now. And capture it --  
20 makes sure it's captured -- capture it for the  
21 future. And then sustain it.

22 It's a time of great opportunity.

1 DR. DICKEY: Dr. Jenkins.

2 DR. JENKINS: Mike, thanks a lot to you  
3 and the team for a very thorough review, a  
4 whirlwind tour, and the really pointed report  
5 coming out of it is -- it's got the marks of  
6 Rotondo all over it, exactly how things would play  
7 out I was sure.

8 When I sent the note to Dr. Dickey to  
9 say, I think you might want to have Mike come and  
10 talk about this. I just learned he's going to  
11 Afghanistan in a couple of days -- we were at the  
12 AAST meeting together when I found that out. I  
13 think this is exactly what the group needed to  
14 hear about Joint Trauma System.

15 And I heard an invitation from you that  
16 we could take advantage of some of the expertise  
17 that exists at the American College of Surgeons,  
18 and specifically on the Committee on Trauma, and  
19 the systems group.

20 I would say to you, Dr. Dickey, that the  
21 Trauma and Injury Subcommittee, as tiny as it is  
22 today, would take on any challenges that come out

1 of this report, help facilitate some of this work,  
2 with your direction, if that's the way we're going  
3 to go. I think that the time to strike is now.  
4 It means something for Jay and Norm and I -- Jeff  
5 Timby, who was pictured in one of Mike's photos up  
6 there, et cetera -- if we can get that group  
7 together.

8 So we're looking for a charge.

9 DR. ROTONDO: And let me just say, Dr.  
10 Dickey, that I know I speak for the President of  
11 the College of Surgeons, who is Brent Eastman, a  
12 trauma surgeon, and one of my mentors, for the  
13 Executive Director of the College, who is David  
14 Hoyt, a trauma surgeon, and one of my mentors, for  
15 the Regents, the Board of Regents, which is  
16 appropriately spiked with trauma surgeons -- that  
17 the College is totally in.

18 And the College is in this room, you  
19 know. Brian Eastridge is the College, Jeff Bailey  
20 is the College, Todd Rasmussen -- we are the  
21 College.

22 And so we will be happy to take whatever

1 resources we have to put them towards this effort  
2 and any other efforts you call upon us to make, to  
3 assist in moving this forward.

4 DR. DICKEY: Well, I thank both of you  
5 for that commitment. And I think some of the  
6 topics that we've heard in your excellent  
7 presentation actually echo some of the  
8 conversation we heard earlier today in an earlier  
9 meeting.

10 So we'll certainly take advantage of  
11 that. Yes, sir.

12 DR. McSWAIN: Norm McSwain, New Orleans.  
13 In 1980, I was working with the Surgeon General of  
14 the Navy to try to get some trauma education and  
15 trauma-skilled people into the Navy to be involved  
16 when -- if the balloon ever went up. We tried for  
17 about two years, working with some very  
18 intelligent people, and could not achieve that.  
19 He told me, Well, Norman, the only way we can  
20 achieve that is you join the Navy Reserves, and if  
21 the balloon goes up, we'll call.

22 It went up in 1991. I went in. And, as

1 expected, there was nobody that knew anything  
2 about trauma. I was USNS Comfort, and maybe two  
3 people three people, knew anything about trauma,  
4 because that had not been preserved.

5 It's imperative upon this group: Do not  
6 let all this knowledge that has been achieved,  
7 over the lives of a lot of our Wounded Warriors --  
8 don't let that get lost. Use what Mike has told  
9 you. Memorialize it. Develop systems, develop  
10 policies, develop manuals. Don't let it get lost.

11 And the College of Surgeons would be  
12 happy to help you with that. And as would the  
13 TCCC Committee.

14 But don't let it get lost. Please.

15 DR. DICKEY: Thank you, Dr. McSwain.

16 Yes, sir -- Admiral?

17 RADM DELANY: As I was listening, one of  
18 the things is, there's a lot of focus on, you know,  
19 getting it down on paper. And I think we have a  
20 perfectly wonderful opportunity to do some  
21 qualitative research about the structures and the  
22 processes.

1           I'm also concerned that we're not  
2     considering -- while we're considering clinical  
3     research and clinical investigation -- we're not  
4     considering doing the kind of work that happens  
5     about organizational analysis and structural  
6     analysis. Because if you're going to ramp up and  
7     you're going to ramp down, you've got to have a  
8     process for thinking this through, and  
9     understanding what kinds of dynamics -- especially  
10    as was raised about the idea of a diplomatic  
11    mission, as well, in terms of a joint-force  
12    structure.

13           So, in thinking about this, of keeping  
14    it on, there has to be kind of an overlaying kind  
15    of like the dynamics beyond just getting the thing  
16    done. And I'm concerned that that continues to be  
17    lost in pretty much the whole discussion today, is  
18    that we talk about getting things done, and  
19    getting it down on paper. But we don't talk about  
20    making sure we understand why what we're doing  
21    works.

22           And if we have problems with these

1 systems -- we started this morning talking about  
2 the process and the structure. But we're losing  
3 that kind of discussion in this meeting.

4 DR. DICKEY: Thank you.

5 DR. ROTONDO: Yes -- I mean, if what I  
6 heard you say was that this would be an amazing  
7 case study in organizational dynamics, you know,  
8 where you're evolving a system which is highly  
9 complex and, in a lot of ways, cross-cultural,  
10 there's tremendous opportunity there, as well.

11 RADM DELANY: I agree. But I think it  
12 has to be followed up with kind of more very kind  
13 of regimented regular research process to  
14 understand beyond just the kind of qualitative  
15 structures. You want to move that on to really  
16 find out what, when, where, and how.

17 DR. DICKEY: I think, embedded in some  
18 of Mike's slides are the concept of there's the  
19 organizational learning to be done here, and  
20 there's process that needs to be looked at.

21 DR. ROTONDO: Yes, ma'am.

22 COL RICHARDSON: Hello, I'm Colonel

1 Katherine Richardson. I'm the British Liaison  
2 Officer over here. And thank you very much for  
3 your presentation -- actually fantastic.  
4 Delighted you were able to get to Bastion as well  
5 as the other Role 3s. Having spent some time in  
6 Afghanistan, as well, myself -- and I was actually  
7 the Deputy RC Southwest Surgeon up until January  
8 of this year. I was in Leatherneck, as well.

9           And my point is, I completely applaud  
10 everything you've said. And a lot of it is  
11 mirrored -- a lot of things that we found from the  
12 UK perspective. And Mike, all the way through, as  
13 well, it has been alluded to already, is that the  
14 Joint Trauma System is fine, but the added  
15 complexity, of course, is you're now operating,  
16 more often than not, and probably in the future,  
17 as well, on the medical side within that  
18 multinational piece, as well. And that's going to  
19 add a layer of complexity to whatever you bring to  
20 it.

21           That continuum chain that you showed  
22 there, the difficulty that you face is that some

1 of those links within that chain don't come under  
2 U.S. authority. They're not either delivered by  
3 U.S. and, as I said, come under specifically U.S.  
4 authority, whether it's from a single nation  
5 authority, or whether it's NATO authority, or  
6 whatever it may be.

7 And that, I think, is the challenge that  
8 we all face on a multinational level.

9 So my question really is, where do you  
10 see the JTS piece kind of fitting into that on a  
11 kind of multinational perspective? Or is it just  
12 kind of take the first step, and then, you know,  
13 take the multinational one as the follow on.

14 DR. ROTONDO: Yeah. The honest answer  
15 is, is I haven't the first damn clue.

16 It really is the honest answer. Because  
17 I think it speaks to a culture and an  
18 organizational structure that I don't understand  
19 -- how it's unified at a higher level.

20 I do know one thing -- that from my  
21 observation, the issue isn't necessarily  
22 multinational as a fundamental problem. It's as

1 much multi-service as it is anything. That would  
2 be the logical -- and I'm being honest. I don't  
3 think the fundamental problem right now is the  
4 multinational nature of the force. I think that  
5 could be worked through.

6 But I would love to hear from those who  
7 actually could answer that question, if there is  
8 some sort of structural answer to it.

9 DR. DICKEY: Jay, you had your hand up.

10 DR. JOHANNIGMAN: Yes.

11 DR. DICKEY: Do you have an answer to  
12 the question?

13 DR. JOHANNIGMAN: No -- well, I don't  
14 have answers. But when I heard that, what I was  
15 thinking, the next place is, once we do these  
16 steps, ATACCC becomes the forum, and it makes it an  
17 easier target for our coalition partners. Right  
18 now, if our coalition partners would want to find  
19 out how we think, they could talk to the guy in  
20 Kandahar and hear one thing, talk to somebody from  
21 Bagram and hear another. And we could send them  
22 all over the map.

1                   So, there is a mechanism for that. We  
2                   call it ATACCC. That's where we're really  
3                   clinically focused. But if you go to ATACCC, we --  
4                   the U.S. Military Medical Corps -- speak with so  
5                   many different voices sometimes that, again, this  
6                   would be the next step of coalescing us to a more  
7                   coherent voice that then can interact with our  
8                   partners in a more coherent fashion. And as we  
9                   develop a system, perhaps challenge them in the  
10                  same fashion.

11                  DR. DICKEY: I have General Robb, Dr.  
12                  Jenkins, and then a gentleman in the back.

13                  MAJ GEN ROBB: I can address it a little  
14                  bit. Again, I want to echo the fact that from an  
15                  informal, collegial exchange of information, ATACCC  
16                  has been absolutely what I would call the mecca  
17                  for the sharing of knowledge amongst the NATO  
18                  nations.

19                  From a more formal perspective, we are  
20                  right now probably about six months to less than a  
21                  year from down-selecting, so to speak, an  
22                  essential part of the Joint Trauma System, and

1       that's the Joint Trauma Registry -- which I think  
2       is key to many of the elements that you talked  
3       about.

4               And so there's a big discussion going on  
5       between, primarily, the U.S. and the UK joint data  
6       trauma registries, of which the agreement will be  
7       that they will be able to talk to each other if,  
8       in fact, we end up with two.

9               And so I think that is an incredible  
10       accomplishment that has occurred, primarily with  
11       the leadership of Colonel Hubrum down there at the  
12       Center for Excellence (inaudible). So I think  
13       that is key.

14              From a perspective of a joint trauma  
15       system that is NATO- led, that's something I  
16       believe is probably -- has not been discussed at  
17       the COMEDS level. COMEDS is the Surgeon Generals  
18       for NATO and the participating nations. We've  
19       been talking about the Joint Trauma Registry.  
20       We've been talking about many of the things that  
21       are part of a Joint Trauma System -- the  
22       standards, you know, the platinum 10 minutes, you

1 know the when do you get to the damage-control  
2 resuscitation and surgery? All these drive  
3 requirements to try to standardize across the  
4 nations.

5           So, although there's not a talk about a  
6 joint trauma system, there is talk, and continues  
7 to be talk, about standardization through the  
8 STANAGs, which is many of the definitions that  
9 each nation brings to the fight. And they  
10 continue to also talk about increased modularity,  
11 because they realize that nobody's going to bring  
12 the entire continuum to the fight either.

13           And so I share with you -- because I'm a  
14 half-full kind of guy, instead of a half-empty --  
15 just in my short amount of time that I've been  
16 with NATO, I am extremely pleased with the  
17 advances they have made. And, again, the  
18 transference of information on the informal basis,  
19 and then pockets of more formal coalescence as we  
20 look at a joint trauma system.

21           And they continue -- again, the  
22 Canadians and the Brits, we have fought side by

1 side. In each other hospitals, I would argue we  
2 are one and the same, as far as a joint trauma  
3 system. And the Germans, of course, have been up  
4 north kind of by themselves, but have adopted a  
5 (inaudible), but within their own nation.

6 DR. ROTONDO: Thank you.

7 DR. DICKEY: Thank you. Dr. Jenkins.

8 DR. JENKINS: Mike, I think one of the  
9 answers lies in a charge that Todd Rasmussen gave  
10 me, which was to write a chapter for a textbook  
11 that he's editing, named after Norm Rich, on  
12 vascular trauma. And it talks about trauma  
13 systems.

14 And to achieve that chapter, we had to  
15 co-assign a British author and an American author  
16 so that we could address both things in parallel,  
17 because that is the only answer that there is  
18 today.

19 When you look at the challenges faced by  
20 NATO, to hear that the trauma registries of the UK  
21 and the United States are actually going to get  
22 together is news -- newsworthy.

1           When you can't decide -- and through no  
2 one's fault -- but when you can't decide on the  
3 format in which to record data on an H&P because  
4 one country won't allow you to put a certain  
5 designated number, or the ethnicity, when one  
6 country's belief is: We don't use transfusions.  
7 Period. Or another law that says, you know, we  
8 can't use tourniquets.

9           I don't know how you build a system in  
10 that, Mike. There's a lot of stuff you have to do  
11 in parallel today, until, you know -- I don't  
12 know, NATO has another several millennia to meet  
13 and decide on some of those issues.

14           DR. DICKEY: That's the glass --

15           DR. ROTONDO: Shall I respond for a  
16 second to that?

17           DR. DICKEY: Sure.

18           DR. ROTONDO: When I think of this -- I  
19 know this is not insignificant. You know, I  
20 understand the importance of it. And I just want  
21 to preempt my own comments by saying I was  
22 incredibly impressed with what's happening at

1 Bastion and the people I met there. You know,  
2 they are saving lives of our soldiers. It's  
3 phenomenal, and we thank you for that.

4 This group needs to think about what we  
5 can do today. Because there's so much of what was  
6 up there that, within six months, there's a chunk  
7 of it that can be just taken care of.

8 Now, that's a very complex question, and  
9 I don't have the expertise or the organizational  
10 knowledge to be able to answer it. But I do know  
11 there's an awful lot that was up there that could  
12 happen pretty much right away.

13 It's a matter of making -- I would  
14 recommend that's where you start.

15 DR. DICKEY: It's always more fun to  
16 start with a few wins.

17 Colonel?

18 COL RASMUSSEN: Well, you know, I don't  
19 have a whole lot more to add, other than at the  
20 ISR -- my name is Todd Rasmussen, I'm the Deputy  
21 Commander of the ISR -- is that Admiral Raffaelli  
22 has been to the ISR three times in the last year.

1                   We're working very closely with Karen  
2           Brohee and Laura London, who is the system expert  
3           as the UK stands up their civilian trauma systems.  
4           We're part of the MOST course -- so, their  
5           pre-deployment training we go and teach at, we're  
6           faculty at, and vice versa. So I'm just echoing  
7           what has already been said. I think we see eye to  
8           eye.

9                   The most recent studies that are coming  
10          out now, looking at the use of tranexamic acid,  
11          prehospital blood, are going to be joint JTTS  
12          studies -- joint, you know, combining the JTTR of  
13          the UK and the JTTR with the U.S. We have to,  
14          because they're treating our guys, and we're  
15          treating their guys.

16                   So I think it's --

17                   BG GAMBLE: And the Canadians are  
18          already on our system.

19                   COL RASMUSSEN: Yes, sir.

20                   BG GAMBLE: -- but they're on our  
21          system.

22                   COL RASMUSSEN: Glass half full.

1 DR. DICKEY: Thank you very much. Dr.  
2 Carmona.

3 DR. CARMONA: Just a closing comment --  
4 to Dr. McSwain's comments.

5 And Dr. McSwain, either directly or  
6 indirectly, is probably responsible, at least  
7 partially, for training most of us in this room  
8 who practice. So his words should be heeded.

9 I think back to the work of Drs. Delany  
10 and others, who -- the trauma registry that's  
11 already -- the Vascular Trauma Registry that's  
12 already been spoken of by Norm Rich. And the rich  
13 and robust information that came from Vietnam, and  
14 a little from Korea before that.

15 And the irony, or the paradox, was that  
16 our nation built the finest EMS and trauma system  
17 based on that information after Vietnam.

18 And yet our military suffered. Because  
19 a decade later, when we did go to war again, we  
20 didn't have the infrastructure to be able to  
21 respond appropriately. And we scurried around. A  
22 number of us who were out in the civilian sector

1 or in the military were trying to figure out how  
2 we can send people to get trained. And the last  
3 thing you want to do is try and ramp somebody up  
4 at the last minute, and acutely gain critical  
5 information that needs to be memorialized and  
6 institutionalized over time.

7           So I think Dr. McSwain's point -- we  
8 should learn from the historical mistakes of the  
9 past. As we ramp down, and the wars go away -- as  
10 the General pointed out, and others -- we need to  
11 make sure that these practices are well embedded  
12 within our system. And obviously, when our  
13 military surgeons are not at war, it will take  
14 public-private partnerships, really, to continue  
15 to do that.

16           But we can't afford to make the mistakes  
17 we made last time, where we were really caught  
18 very, very unprepared, and had to do a lot of  
19 11th-hour planning just to be able to ramp up for  
20 the contingencies that, fortunately, in the first  
21 Gulf War we didn't appreciate.

22           But some of the numbers were pretty

1       daunting, and we would have been -- many of you  
2       may remember the GAO report and few reports that  
3       came after the first Gulf War, that said the best  
4       thing that happened that it was fortunate that all  
5       of the predictions never came to be. We had  
6       150-something casualties, I believe. But some of  
7       the original estimates from the commanders were as  
8       high as 20,000. And some of the original burn  
9       casualties were going to be up to 5,000. And we  
10      only had 2,300 burn beds in the whole United  
11      States. And nobody had thought about all of those  
12      things.

13                As Michael has showed us today, we have  
14      an opportunity now to really take this information  
15      and aggressively move it forward. And as combat  
16      winds down, make sure that it is memorialized and  
17      institutionalized, and continues as we move  
18      forward. Hopefully, we'll never have another war.  
19      But we will be prepared this time.

20                DR. DICKEY: I think that's perhaps an  
21      excellent place to wind down an excellent  
22      presentation and a very good discussion -- with

1 the admonition that we continue to have the  
2 discussion until we manage to get some agenda  
3 items and some action forward.

4 Thank you. And thank you for an  
5 excellent presentation, Dr. Rotondo. We  
6 appreciate it.

7 Ms. Bader, as we close out a very  
8 informative day, would you like to offer any  
9 administrative remarks before the meeting is  
10 adjourned?

11 MS. BADER: Certainly. Just a few  
12 administrative remarks.

13 For the Board Members, there's a manila  
14 envelope inside your binders. So please put your  
15 briefing materials in the manila envelope and  
16 leave the binder here.

17 For those of you who are departing  
18 tonight, there is a shuttle from the hotel  
19 directly to the airport.

20 As a reminder for the Board members who  
21 will be attending the CoTCCC meeting tomorrow, we  
22 will have a breakfast in the Potomac room at 7:30

1 a.m. And the CoTCCC meeting will begin promptly  
2 at eight o'clock in this room.

3 Additionally, we will have a working  
4 lunch for the Board members. And, again, that  
5 lunch will be in the Potomac room.

6 For everybody -- for those of you who  
7 are joining us for dinner this evening, please, if  
8 you have not already paid Jen Kleveno, please  
9 provide her with your \$35 in cash. And we will be  
10 meeting in the hotel lobby at 6:15 to walk to the  
11 restaurant.

12 Thank you so much. This concludes  
13 today's meeting of the Defense Health Board.

14 (Whereupon, at 5:16 p.m., the  
15 PROCEEDINGS were adjourned.)

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CERTIFICATE OF NOTARY PUBLIC

COMMONWEALTH OF VIRGINIA

I, Stephen K. Garland, notary public in  
and for the Commonwealth of Virginia, do hereby  
certify that the forgoing PROCEEDING was duly  
recorded and thereafter reduced to print under my  
direction; that the witnesses were sworn to tell  
the truth under penalty of perjury; that said  
transcript is a true record of the testimony given  
by witnesses; that I am neither counsel for,  
related to, nor employed by any of the parties to  
the action in which this proceeding was called;  
and, furthermore, that I am not a relative or  
employee of any attorney or counsel employed by the  
parties hereto, nor financially or otherwise  
interested in the outcome of this action.

(Signature and Seal on File)

Notary Public, in and for the Commonwealth of  
Virginia

My Commission Expires: July 31, 2015

Notary Public Number 258192

