

Text of Remarks of VADM Richard H. Carmona, MD, MPH, FACS
United States Surgeon General
Frontiers of Knowledge in Sleep & Sleep Disorders:
Opportunities for Improving Health and Quality of Life
March 29, 2004
National Institutes of Health, Bethesda, MD

Good morning. As you can see from my CV, we have a lot in common. I don't sleep much and you study people like me. Dr. Alving, thank you for the introduction, and thank you and Dr. Hunt for convening this very important meeting.

I personally really need your help. As you heard, I'm a recovering surgeon. I have a huge sleep debt and probably I can never repay that. For me and some of my colleagues, every week is sleep disorders week. Sleep science is some of the most important work in medicine today. It is also some of the least understood and least appreciated.

This conference should go a long way in addressing that. Over the next two days, you will hear how information about sleep and sleep disorders can and must be translated into cost-effective, comprehensive, and broadly applied strategies to improve all aspects of sleep-related health care. Dissemination of the existing body of medical knowledge and implementation of expanded clinical practice guidelines are critically important.

As Surgeon General, my mission is to protect and advance the health of the nation. I can think of no better group than those of you who have joined together from a broad range of disciplines, backgrounds, and viewpoints to help us move the prevention initiative forward. We need your expertise to improve the health and well-being of every man, every woman, and every child in America and throughout our global family. Chronic sleep loss and untreated sleep disorders have a profound impact on Americans of all ages. Seventy million Americans may be affected at an annual cost of \$15 billion in health care expenses and \$50 billion in lost productivity.

As I reflected and worked with my staff to say something that would be germane to this presentation, I drew mostly on my own personal experience. As you heard, I went into the Army as a young man at 17; I received my GED there, and I began my career in the Army and then in the Special Forces. When I think of every step in my life and every juncture, sleep or lack of sleep was really instrumental in speeding me up or slowing me down, respectively.

I came from a very poor family. When I was six years old, we were homeless for the first time. It wasn't uncommon that we were hungry, and we moved frequently. I thought about that, and I think now about children who have those stresses and in whom sleep deprivation is not uncommon. That affects learning. It affects immunological function. It affects across the board just about everything. Again, I had never thought about that until I had to sit down and look at your syllabus and prepare to address this group. I thought, this really is a cross-cutting initiative.

When I moved forward in my life to being a soldier in the Army -- and especially a Special Forces soldier -- I remember some of my senior NCOs in Special Forces Training Group pointing out that sleep was a sign of weakness. I remember some of the early studies, when I was too young to truly understand what they were doing. But, as you know, in special operations, we push the envelope quite frequently, and in fact sleep was treated as if it was a sign of weakness.

The fact is that I remember that the Navy did a number of early studies on performance decrement as it related to sleep. I can remember some of the questions that they'd ask us after being up days and nights being harassed, being put through simulated POW-type training, escape and evasion and such, and there wasn't one special operator who would ever admit to being tired or ever admit to not being able to perform optimally.

I can remember before performance testing was as skillful as it is today, early researchers were trying to figure out "Was this a bunch of macho, testosterone-laden guys or was there some performance decrement?" As we lined up to go through various tests, technical people had to do some of them at very high risk. We would always be asked, "Are you guys good to go," and the answer from a special operator was [always], "Good to go, sir. No problem. Good to go."

[It didn't matter how tired we were.] We were never going to admit it as long as we could keep our eyes open. But yet, as we were tested, it was clear that our thought processes lagged; our physical ability lagged; and our ability to hit the target with a weapon, our ability for [good] judgment, our ability to interact very quickly and to multi-task were all diminished. Yet every single one of us said "Good to go," and we felt we were 100 percent every time.

As I moved forward into other positions that I've had -- being a police officer and a paramedic, working the streets for many years -- again, rotating shifts threatening the circadian rhythm, sleepless nights, sleepless days, [I wondered] how does that affect performance? And yet, in very critical positions that we have every single day to take care of our society, people are subjected to this time and time again, and it's almost with an ignorance that supervisory personnel just keep those cycles rotating. We have a fairly good body of science now to say that there are some problems with this, and yet our personnel structures still don't reflect the knowledge base that we have. I certainly was victimized by that also.

And last but not least, probably, is being a surgical resident -- that glorious rite of passage where sleep is also a sign of weakness. Working those "every other" nights -- which come out to 36 and 12 most of the time, if not 24-7 -- what's the impact on patient care when you haven't slept for 24 or 30 hours, and you're the senior or chief resident and you're having to make critical decisions on 30 or 40 patients on your service, from writing antibiotics to various complex pharmacological regimens for oncologic needs, to supervising interns and residents and making sure they are writing the right orders, to supervising the intensive care unit and doing complex surgical operations after being up that long?

What is the impact on our patients? It's significant, obviously. We figured it out a number of years ago with the Libby Zion case in New York. We now have 80-hour work weeks, which in some places are still somewhat circumvented and ignored, especially within surgery. There are huge workforce implications to this. So, again, as I look through my whole life and as I sat the last couple of days and read through every one of those abstracts in the syllabus (which were fascinating), I kept thinking, "My God, this really is important stuff. It's stuff that we've missed, and it is so cross-cutting that it affects all of our society."

[Then there is] the issue of use of performance enhancers. When I was a special operator, I remember when we'd get multi-tasked with missions back to back and people were tired, it wasn't uncommon that besides a lot of caffeine, coffee, and cokes, many would look for amphetamines to keep them going. As a flight surgeon, I saw this with pilots, and it was a sanctioned activity: "Because somebody's tired and they have to make that long flight, let's give them some amphetamines. Let's perk them up."

The body of knowledge at that time was weak, if it existed at all, to suggest that there is going to be a performance decrement even though the person appears to be awake -- that is, the eyes are open. What are their reasoning skills? What is their judgment, and can they perform the tasks that they normally perform? So that's another issue.

There is also a major public health concern for drivers -- the average citizen, every day driving a car, being tired, not getting sleep the night before. As you know, there's significant data now to demonstrate that as a tired driver, you're probably as dangerous as a drunk driver in a lot of respects. [Sleep affects] workers in professions across gender and ethnic lines. From infants to seniors, it affects productivity, health, safety, and longevity, as well morbidity and mortality. [This is] truly an important topic.

I look at my portfolio that I've been assigned from the President and the Secretary, which is a very strongly evidence-based portfolio as to what we need to do to improve the health and safety of the nation. I look at my top three areas. They are not exclusive, but they are probably what I spend most of my time on now. The first is prevention -- moving our society from a treatment-oriented one to one that embraces prevention. Again, I draw on my own life experiences -- especially being a nurse, a paramedic, a trauma surgeon, and having been on the receiving end of the results of all of those sleepy drivers who crash their cars -- and the drunk drivers, the domestic violence -- all the stuff we have in society that's preventable. And, I think of sleep disorders: What was the impact on all those thousands of patients over the years that I admitted with those problems? I would say it's pretty significant.

When I move on to the second area, right up front it doesn't seem to have a connection. It's preparedness. That is, how do we prepare our country for all the hazards and threats that we may face especially after 9/11, including terrorism and weapons of mass destruction? What's the connection there? We have this huge workforce that we call "first responders" who work rotating shifts to respond to all of our emergencies -- cops, firemen, EMS providers, and so on. What's the impact on their performance during an emergency when they are sleep deprived? So, again, a cross-cutting theme emerges.

Then I go to the third area in my portfolio that's extremely important: health disparities. Again, I ask more questions related to sleep disorders and disparities. As I look at the body of science that's out there, I say, "Well, is this another area of science where we're going to see significant disparities manifest, and if so, why? What is the etiology? Why is it that blacks, Native Americans, Hispanics, people of color, typically have less access to care? When they get the care, they have poor outcomes. Is it the same for sleep disorders? What ties that group in?"

I don't have those answers, but I know some of you are working in those areas. It sure opens up a lot of questions for me as far as performance. If sleep deprivation and sleep disorders are major contributors to health disparities, then I can't be successful in eliminating health disparities in our society unless I work with you to get a handle on the contributing factors.

The last area that is extremely important is truly a separate part of the portfolio, but I look at it as the common currency for success in everything I do. It is health literacy. I'm here to tell you that sleep disorders probably represent health literacy in our society at its worst. We are largely a health illiterate society. Every day things that I talk about, the obesity epidemic, for instance -- nine million children are overweight or obese, two out of three American adults are overweight or obese, costing \$117 billion a year -- and yet we have science now that shows there's a relationship between sleep disorders and obesity, as well as between diabetes and obesity.

Right now, as you know, we have [obesity] in epidemic proportions in our children, and the demographic curves are skyrocketing. Obesity is going to pass smoking as the largest preventable killer of Americans very shortly. We're up to about 400,000 deaths per year; smoking is at about 440,000. It's taken us a long time to get to that number for smoking. It's taken us a very short time for obesity, and yet there is a factor that we don't fully understand yet: sleep disorders as a co-morbid factor, as a causative factor, maybe both. But clearly, we need a lot more work in this area.

The issue of health literacy is as important to you as it is to me because one of the barriers you have to this very important science, which you will be discussing the next two days and coming to some conclusions as to what paths you're going to take in the future, is that you have a disconnect with society. Society doesn't realize that this is a problem. So there is a huge health literacy gap out there. In effect, you're here preaching to the choir. You're all here because you are the experts, and the people you'll take this information to at universities, medical centers, Army, Navy, Air Force, across the board are the people who want to hear your message.

But the people who need the message are the ones that are the most distant from it, and they really don't connect sleep problems with the multitude of issues, including many preventable diseases in our society, which give us a huge disease burden -- a huge economic burden, one that we can no longer afford to sustain. If we don't embrace prevention, there is no solution to the health crisis.

I would submit to you that you're part of the solution for prevention because what you're talking about the next two days contributes very significantly to prevention and weighs heavily for me. I need that information. I need your best practices to work with you and the leadership here at NIH to be able to get the message out, so that people understand these contributing factors and how we can make our country healthier. This is a fascinating science; it has multi-factorial etiology.

There are numerous translational opportunities with the work you are doing to improve the health and safety of our nation. The public health model is well suited to translate these essential health messages to society. Improving health literacy regarding sleep disorders for our health professionals, peers, and patients is long overdue. Your time has come. We anxiously await your conference recommendations and hope that this is the first of many conferences like this. Thank you very much.