



Hubert Humphrey Building, Room 800, 200 Independence Avenue, SW  
 Washington, DC 20201  
 Wednesday, June 13, 2012 – 9:00 am to 5:00 pm

**Voting Membership**

Name		Term
Chairman Gailen D. Marshall, Jr., MD, PhD	Jackson, MS	04/10/10 to 04/10/14
Adrian M. Casillas, MD	Shreveport, LA	06/13/12 to 06/13/16
Dane B. Cook	Madison, WI	04/10/10 to 4/10/14
Lisa Corbin, MD	Denver, CO	06/13/12 to 06/13/16
Jordan D. Dimitrakoff, MD, PhD	Boston, MA	04/10/11 to 4/10/15
Mary Ann Fletcher, PhD	Miami, FL	06/13/12 to 06/13/16
Eileen Holderman	Galveston, TX	04/10/10 to 4/10/14
Steven P. Krafchick, MPH, JD	Seattle, WA	07/01/10 to 07/01/14
Susan M. Levine, MD	New York, NY	05/10/10 to 05/10/14
Jacqueline E. Rose, MD	Columbia, MD	06/13/12 to 06/13/16
Ann Vincent, MD	Rochester, MN	04/10/11 to 04/10/15

**Ex Officio Membership**

**Agency for Health Research and Quality**  
**Beth A. Collins Sharp, PhD, RN**  
 Senior Advisor for Women’s Health and Gender  
 Research

**Food and Drug Administration**  
**Theresa Michele, MD**  
 Medical Officer Team Leader  
 Center for Drug Evaluation and Research

**Centers for Disease Control and Prevention**  
**Ermias, Belay, MD**  
 Associate Director for Epidemiologic Science  
 Division of High-Consequence Pathogens

**Health Resources and Services Administration**  
**Deborah Willis-Fillinger, MD**  
 Senior Medical Advisor  
 HIV/AIDS Bureau

**Centers for Medicare and Medicaid Services**  
**Alaine Perry, MPH**  
 Senior Advisor  
 Center for Strategic Planning  
 Strategic Planning Group  
 Centers for Medicare & Medicaid Services

**National Institutes of Health**

**Susan Maier, M.D., *Primary***

Senior Advisor  
Office of Research on Women's Health  
Office of the Director

**Janine Austin, Clayton, M.D., *Alternate***

Deputy Director  
Office of Research on Women's Health  
Office of the Director

**Social Security Administration**

**Cheryl A. Williams, *Primary***

Office Director  
Office of Medical Listings Improvement

**Amanda Wulf, *Alternate***

Acting Deputy Director  
Office of Medical Listings Improvement

**Designated Federal Officer**

**Nancy C. Lee, MD**

Deputy Assistant Secretary for Women's Health

***Alternate Designated Federal Officer***

**Martha D. Bond**

Senior Public Health Advisor  
Office on Women's Health

**Agenda**  
**CFSAC Spring 2012 Meeting**  
Wednesday, June 13, 2012

9:00 am	<a href="#"><u>Call to Order</u></a> <a href="#"><u>Roll Call</u></a>	pg 3	Gailen Marshall Jr., M.D., Ph.D. <i>Chair, CFSAC</i>
9:15 am	<a href="#"><u>Welcome Statement from the Assistant Secretary of Health</u></a> <a href="#"><u>New Members Oath of Office</u></a>	pg 3	Howard K. Koh, M.D., M.P.H. <i>Assistant Secretary for Health U.S. Department of Health and Human Services</i>
9:45 am	<a href="#"><u>Opening Remarks</u></a> <a href="#"><u>Introductions</u></a> <a href="#"><u>Housekeeping</u></a>	pg 25	Nancy C. Lee, M.D. <i>Designated Federal Officer</i>
10:00 am	<a href="#"><u>Childhood Chronic Fatigue Syndrome</u></a>	pg 9	Peter C. Rowe, M.D. <i>Johns Hopkins Children's Center Division of General Pediatrics</i>  Gail Houle, Ph.D. <i>Associate Division Director Office of Special Education Programs Department of Education</i>
11:00 am	<a href="#"><u>Break</u></a>	pg 24	
11:15 am	<a href="#"><u>Public Comment</u></a>	pg 50	Public

12:15 pm	<a href="#">Lunch Break</a>	pg 25	
1:15 pm	<a href="#">Childhood Chronic Fatigue Syndrome</a>	pg 25	Committee Members  Panel Discussion Youth and Caregiver Issues
2:15 pm	<a href="#">Agency Updates: CDC, SSA, FDA</a>	pg 36	<i>Ex Officio</i> Members
3:15 pm	<a href="#">Break</a>	pg 42	
3:30 pm	<a href="#">Public Comment</a>	pg 53	Public
4:30 pm	<a href="#">Committee Discussion and Plans for Day 2</a>	pg 42	Committee Members
5:00 pm	<a href="#">Adjourn</a>	pg 50	

The following document contains highlights of the Chronic Fatigue Syndrome Advisory Committee (CFSAC) Meeting held on June 13, 2012. Access a pod cast of complete meeting proceedings at: <http://www.hhs.gov/advcomcfs/>.

## Call to Order/Roll Call

### Dr. Gailen Marshall

- Noted his affiliation with the University of Mississippi Medical Center and new position as CFSAC chair.
- Welcomed meeting attendees.
- Noted that the meeting will start with “comments from our benefactor, our champion,” Dr. Howard Koh, Assistant Secretary for Health. “You’ll never find a stronger advocate for this illness that Dr. Koh.”
- Stated that he is honored to serve as CFSAC chair and take part in the committee’s important work.
- Stated that CFSAC members are humbled in front of patient groups that attend meetings and declared that the committee will do its best to serve the CFS population.
- Noted the exciting scientific developments in the CFS field over the past year and expressed hope that CFSAC can help push those developments forward.

## Welcome Statement from the Assistant Secretary for Health

**Howard Koh, M.D., M.P.H., Assistant Secretary for Health, U.S. Department of Health and Human Services**

- Thank you, Dr. Marshall for the kind introduction and for stepping up to serve as the new chair for this very important advisory committee. I know that you have a lifetime commitment to doing research on this disease and caring for patients with CFS. Just to brag about Dr. Marshall for a minute, he’s professor of medicine and pediatrics at the University of Mississippi Medical Center. He spent about 16 years providing care for patients with CFS. He’s published numerous peer reviewed articles and book chapters on a range of topics, including allergy, immunology, and infectious diseases. Dr. Marshall currently serves as editor in chief of the *Annals of Allergy, Asthma, and Immunology*. He’s an outstanding colleague, an outstanding professor and researcher, and we’re delighted he’s our new chairman.

- We have important work to do. This is a critical area of public health. There are many patients suffering from this condition. We need to do as much as possible to coordinate research, education, and patient care and try to improve quality of life for those who are affected by this condition around the country. We're looking for CFSAC to continue the work. We're grateful to committee members for giving us your time to make a difference for public health.

Dr. Koh requested that CFSAC members introduce themselves:

**Dr. Lee** reminded members to press microphone buttons before speaking. She noted that CFSAC was live-streaming over the internet and over the phone via a call-in number.

Dr. Nancy Lee, Deputy Assistant Secretary for Women's Health in the Office of the Assistant Secretary of Health and CFSAC designated federal officer (DFO)  
Marty Bond, Senior Public Health Advisor and alternate DFO

### **Voting Members**

Dr. Susan Levine, private practice, New York City  
Dr. Ann Vincent, general internal medicine, Mayo Clinic  
Dr. Jacqueline Rose, patient sufferer  
Steve Krafchick, attorney in Seattle representing people with CFS  
Dr. Adrian Casillas, Associate Professor in the Allergy and Immunology Section, Louisiana State University Health Sciences Center, Shreveport  
Dr. Mary Ann Fletcher, Professor of Microbiology, Immunology, Medicine, and Psychology; University of Miami, Miami, FL  
Dr. Jordan Dimitrakoff, Boston, MA  
Eileen Holderman, patient representative

### **Ex Officio Members**

Dr. Susan Maier, National Institutes of Health (NIH)  
Amanda Wulf, Social Security Administration (SSA)  
Alaine Perry, Centers for Medicare and Medicaid Services (CMS)  
Dr. Beth Collins Sharp, Agency for Healthcare Research and Quality (AHRQ)  
Dr. Terry Michelle, Food and Drug Administration (FDA)  
Dr. Ermias Belay, Centers for Disease Control and Prevention (CDC)

Dr. Koh resumed his remarks:

- Let me start by thanking our tremendous colleagues at the Office of Women's Health, Dr. Nancy Lee and Marty Bond. Dr. Lee is a relatively new director of our women's health office. In her opening year, she has spent a tremendous amount of time on this area and this advisory committee. One issue that came up immediately was how to make sure the community around the country has access to the information and valuable discussion that goes on here at every CFSAC meeting. We wanted to do that in a way that is open, transparent, and includes as many people as possible. In these difficult budget times, we wanted it to also be as low-cost as possible. After much exploration, Dr. Lee and Ms. Bond discovered this live broadcast video team. We feel like we're doing this on TV. We have three cameras here. This is the HHS

Secretary's communications team. They're bringing you this CFSAC meeting live around the country. We're very grateful to you, Nancy and Marty, for making that happen.

- I want to welcome not only the new CFSAC chair, Dr. Marshall, but three new members. We're delighted with the caliber of our members. We try to bring in the highest level colleagues to make a difference on this committee:
  - Dr. Adrian Casillas is Program Director, Allergy and Immunology Section, Louisiana State University Health Sciences Center, Shreveport, LA.
  - Dr. Jacqueline Rose is a fulltime, staff board-certified anesthesiologist at the Veterans Administration Medical Center in Washington, DC. She's also a member of the CFIDS Association, has extensive interest in public health, and is a person who suffers with myalgic encephalopathy (ME).
  - Dr. Mary Ann Fletcher is director of the E.N. Papper Laboratory of Clinical Immunology, University of Miami Miller School of Medicine, Miami, FL. She has participated in research projects in CFS, HIV/AIDS, and Gulf War illness.

We continue to have an outstanding advisory committee and we want to thank the new and returning members.

Dr. Koh conducted the swearing in ceremony for the new CFSAC members, then continued his remarks:

#### **CFSAC Progress Since the November 2011 Meeting**

- The CFSAC Research Subcommittee has contributed to an important published article entitled "Minimum Data Elements for Research Reports on CFS." We're trying to make research efforts more uniform for researchers trying to advance the science in this vital area. This article on minimum data elements will help us reach that goal.
- The CFSAC Education and Patient Quality of Life Subcommittee helped to identify the topic for today's discussion on childhood CFS. I want to thank the subcommittee for identifying that critical area and bringing some key speakers for today's discussion. This same subcommittee is also working closely with the CDC on the content of the agency's CFS website.
- We want to thank these panels for pushing those efforts forward and continuing to prioritize the recommendations that are coming out of CFSAC.

#### **HHS Progress**

We understand that we need to integrate and mobilize efforts in the ME/CFS area better than before. I mentioned during the last CFSAC meeting that about a year ago, we and the Secretary convened a cross-departmental meeting on ME/CFS to consider how the department could address the needs of the patient community around the country. We all agreed that we need to improve communication and collaboration within the department. An ad hoc working group has been established, has met twice, and will continue to meet. I want to thank Dr. Nancy Lee who has chaired these efforts. Getting all these leaders in the department to come to the same table and establish a common agenda is never easy. These two meetings have been productive and we'll have more until we have more deliverables to present to you.

The agencies involved include NIH, CDC, AHRQ, HRSA, the Substance Abuse and Mental Health Services Administration, CMS, FDA, and the Administration on Children and Families. As the assistant secretary, I have the honor of seeing the broad departmental perspective in this area and many other public health areas. I know we make advances when the whole department is working together as one. That is what the ad hoc working group is trying to do in the CFS area.

At these two key meetings under Dr. Lee's leadership, we asked each agency to put forward accomplishments and opportunities for the future that would begin new efforts and conversations identifying new activities while trying to do the best we can in a very difficult funding environment. Let me share highlights of the two meetings:

- NIH has established a Special Emphasis Panel (SAP) dealing with CFS. This panel regularly reviews submitted applications for CFS research. This SAP is important to coordinating attention to all the submitted applications to this critical research agency.
- The CDC has made available clinical assessment data for all its researchers involved in CFS and put that forward in their research data center. That's another step forward with respect to integration and transparency on data discovery in this key area. The CDC is also promoting provider education and finalizing and receiving accreditation for two continuing medical education (CME) courses on CFS that clinicians can access via the internet. We know that provider education continues to be a very, very important area to reduce the stigma and increase understanding.
- The FDA has developed in-house expertise on CFS by educating medical product reviewers and centralizing the review of applications from medical product developers seeking approval for CFS treatments. This is raising awareness at the highest levels of FDA.
- The CDC has completed its first round of updates to its website incorporating the important feedback that we have heard from advocates. We want that dialog to continue and we're committed to making that partnership go forward.
- Together as a department in these conversations, there have been preliminary ideas put forward about possibly having a webinar on CFS and establishing a patient registry. Those conversations are ongoing.
- We know that everybody is interested in cutting edge research in this critical area. There's a critical study that is being finalized now led by Columbia University investigators. The results of that study are being finalized as we speak. One very valuable outcome of that effort is that an important and unprecedented repository of blood samples has been collected by Dr. Ian Lipkin and his investigators. These are samples from individuals with well-characterized disease. In my discussions with NIH leaders, they stress that having this new repository of blood samples will be of great value for future potential studies. We are awaiting the results of that study and hope to share them that with you in the near future.

#### **Accomplishments of the Office on Women's Health**

- Dr. Lee has posted information about a listserv on the CFSAC website and hopes it will help subscribers receive information about upcoming CFSAC meetings, call attention to the live web streaming, and share other cutting edge information. Please take a few minutes to join by going on the CFSAC website. You can find out more details from flyers that are being distributed at this meeting today.
- I'm very pleased that under Dr. Lee's leadership we want to improve communication with ME/CFS organizations around the country. As you can see from the CFSAC meeting agenda, a number of those

organizations have been invited to give presentations here. We want to improve dialog with these organizations and have them represented on this advisory committee. That's a process that Dr. Lee is overseeing.

- As we keep implementing health reform in this country through the tremendous efforts of the HHS Secretary and so many others in this department, we want to stress that health reform has an impact on patients with CFS. We have a pre-existing condition insurance plan program that was launched so that people with pre-existing conditions who have not been able to get insurance could potentially get coverage by looking into this option. We understand that this helped at least some people with CFS around the country. We look forward to telling you more about that at future meetings.

These are important advances, but we still have a long way to go, as you know more than anyone. So we are pleased to have this meeting today, have the leadership of Dr. Marshall, have the expertise of the great committee, have this important focus on childhood CFS, hear from the advocacy organizations, make sure the meetings are transparent so we can improve the dialog, and see if we can keep making advances in this critical area.

### **Committee Discussion**

**Mr. Krafchick:** I'd just like to say that the ad hoc working committee really is important. I know that the work is going forward and it's important that it does go forward to coordinate resources. I'm encouraged about what you said about the progress that's being made and I know there's still a long way to go.

**Dr. Koh:** We'll keep updating you. We continue to promote that cross-department integration that we know is so critical.

Let me go around the room and thank each and every one of you on the committee for being part of this important meeting. I look forward to the outcomes and continued interaction with your new chair. Again, I want to thank Dr. Lee and Ms. Bond for putting so many hours into making each meeting better and trying to address this critical condition as a united group on behalf of the whole country.

**Dr. Marshall:** I want to add my thanks to Dr. Koh. Many times we don't realize the commitment. Even the relatively few minutes he's able to spend with us represents a great commitment. I was told that the number of meetings with which he deals is in the dozens per day. As someone who deals with a couple per day and whines about it a lot, I think it gives me a better perspective.

I want to take just a moment to let everyone know what I see as the importance of this committee and where I see this committee going with its efforts. Some critics might suggest that I'm not really a good person to lead CFSAC because I don't do active CFS research at this moment. I've done some in the past and cared for patients in the past. In Mississippi, CFS is not appreciated, unfortunately, and there are no physicians of whom I'm aware who identify themselves as experts in the care of CFS patients. I say that based on the fact that I get regular calls from people asking if there's anyone in Mississippi who can care for them.

We are working extensively trying to get more and more of the primary care physicians, pediatricians, family medicine, and internal medicine people caring for patients who have complex illnesses such as this. Biomedical research is moving along, and I have done this for about the last 35 years. Some of the things that we dreamed about years ago are coming to pass. When we put "translational" with "research," it means we want to take principles we learn at the bench and take them to the bedside.

A person who I know and respect suggested the term “reverse translational,” which means going from the bedside back to the bench. There are those who love to do that. When we go from bench to bedside, we think research principles. Bedside to bench, we think about our patients. Interestingly, there are three areas in medicine that are sort of coming around. Some of them are nouveau old. They have been around and now are back again. Some really are new. I think they bear strong importance to this illness:

**Holistic Medicine** – Too many times there’s an arrogance in Western medicine that says if we can’t give a pill or do a procedure, it’s not real and if it *is* real, it’s the patient’s problem, not the doctor’s. The holistic approach to care says that a person has a body, a person has a mind, and a person has a spirit—some people might call that a soul—and you must minister to all three of those to properly care for a patient. That is a Hippocratic principle that I was taught in the early 80’s when I went to medical school. I continue to try to teach that to my trainees. While we espouse it, unfortunately, sometimes we talk the talk and we don’t walk the walk.

**Integrative Medicine** – It’s something that many people turn to, again, because it uses the argument that any evidence-based approach to care, whether it’s classical Western medicine or whether it might be alternative or complementary procedures, can be used for the ultimate good care of the patient.

**Personalized Medicine** – This is the newest one and perhaps for us scientists, the sexiest one. Personalized medicine makes the argument that by a genetic analysis, you and I are unique enough that we can learn profiles of specific genes that will allow clinicians to select the proper and most effective therapy for the individual patient.

All three of these are aimed at improving diagnosis and treatment, particularly of complex illnesses. Not many people seem to think that we need a lot of extensive research into how to take care of a middle ear infection in an infant. Most suggest that’s not a complex illness. On the other hand, illnesses such as ME/CFS certainly have tremendous complexity. While these terms are fairly recently used, they’re well appreciated concepts in medicine that we must address.

Most diseases are actually syndromes. We’re coming to understand that:

- We’re coming to understand that a similar group of signs and symptoms can be caused by a variety of different factors that require distinct therapies. Asthma is a great example. Hypertension is another. Diabetes is another. Cancer, to me, is the best example I can think of because I’m old enough to remember when people thought there were three or four kinds of cancer. Go to any academic oncology center now and there are three or four *hundred* different cancers if you drill down to subgroups. Their clinical protocols are aimed at very, very specific therapy.
- We also know that not all patients have the same symptoms, even though they have the same illness. That’s called the heterogeneity of the disease. We’re beginning to understand that in diseases we thought we knew how to care for many years—hypertension, asthma, and cancer being good examples of that.
- We all know that different patients respond differently to different treatments, which has to do with the recognition of the unique nature of each individual being.

ME/CFS is a complex illness that has similar symptoms in many patients but still has a spectrum of illness in severity, in accompanying comorbidities, and in responses to therapy. This is a fundamental reason for the lack of accepted diagnostic criteria and effective therapy that currently exists with patients with ME/CFS. Combining this

with the historic and sometimes current lack of understanding among clinicians, researchers, payers, and the public, ME/CFS patients are still waiting, still suffering, still asking for help.

Ultimately, the most effective approach to ME/CFS will be addressing the whole patient—body, mind, and spirit—using any and all evidence-based approaches with the understanding that individual approaches must be paramount for caring for patients with this illness. As the newly appointed chair, I pledge to you on behalf of my colleagues that we will continue to advise the Secretary based upon these principles of scientific evidence, clinical wisdom, and moral compassion.

## **Introduction of Dr. Rowe**

**Dr. Marshall:** Dr. Peter Rowe is professor of pediatrics at Johns Hopkins Children’s Center in Baltimore, MD. He is a Canadian from McMaster University where he went to medical school. He did his residency in general academic pediatrics. He was a research fellow and chief resident in pediatrics at Johns Hopkins Hospital. He then became a staff member of Children’s Hospital of Eastern Ontario in Ottawa and assistant professor of epidemiology and community medicine. Fortunately Hopkins was successful in recruiting him back in 1991. He has published more than 60 peer reviewed papers, ten book chapters, and edited the eleventh edition of the Harriet Lane Handbook. I’m an internist but my daughter is a pediatrician, and the Harriet Lane Handbook is the bible for pediatricians. They don’t walk very far without it, particularly when they’re training.

Dr. Rowe’s early research interests were in the general area of clinical epidemiology and pediatrics, but for the last 20 years, his work has focused more exclusively on conditions characterized by chronic fatigue. He’s directed the chronic fatigue clinic at Hopkins Children’s Center since 1996, where he is the inaugural recipient of the Sunshine Natural Wellbeing Foundation chair in chronic fatigue and related disorders.

## **Childhood Chronic Fatigue Syndrome**

### **Pediatric CFS: Gains and Gaps**

**Peter C. Rowe, M.D.**

I have entitled my talk “Gains and Gaps” because I want to emphasize the gains in understanding that have come from the careful clinical research that has gone on the last couple of decades. As this panel knows, as it usually happens in science, those gains help us emphasize where the gaps are in our knowledge.

### **Overview**

Let’s start with some comments that are not really controversial:

- By definition, this illness affects previously active individuals.
- Both clinic-based and population-based studies agree that pediatric CFS is much more common in those over the age of 10. It can occur under the age of 10, but we want physicians to look carefully for other causes in younger children.
- As in adults, females are more affected than males. The female-to-male ratio in pediatric studies ranges from 2:1 to 5:1 for reasons that are still not entirely clear.

- The estimates of prevalence suggest that CFS in pediatrics affects somewhere between 100 and 300 of every 100,000 adolescents. There are methodological reasons that we won't have time to go into to think that those prevalence estimates are incomplete and perhaps underestimates.
- The emerging consensus is that there are many ways of developing CFS and many factors that can contribute to the perpetuation of symptoms. For those of us who are clinicians, this heterogeneity means we have to use individualized treatments. I just want to emphasize that Dr. Marshall and I were not privy to one another's comments, but I'm glad for the comments he made about that concept. We can't use formulaic algorithms in treatment. For researchers, the heterogeneity of the illness creates a lot of background noise, which means we need very large sample sizes in our treatment studies and careful sub-grouping in our descriptive studies.
- We have known for some time that CFS can appear in approximately 10% of adolescents following Epstein-Barr virus (EBV) infection, but EBV isn't the only infectious agent that precipitates symptoms. There's much we don't understand about other infectious triggers. In addition, there's a gradual onset of symptoms that can occur in some studies at rates of up to 68%.
- A number of physiologic conditions can converge to create CFS symptoms and several groups are beginning to better quantify the comorbid conditions in pediatrics, notably Esther Crawley and her colleagues in Great Britain.

### **Symptoms of Pediatric CFS**

This is a study drawn from work in a national survey of Dutch general practitioners showing the prevalence of the Fukuda CFS symptoms criteria. Not only did all of the individuals in the study have fatigue for six months or more, but the relative frequency of the other symptoms is shown here:

- Unrefreshing sleep – 84%
- Post-exertional malaise for more than 24 hours – 80%
- Memory/concentration problems, which are often the most frustrating for patients – 79%
- Headaches – 78%
- Muscle pain – 59%
- Joint pain – 48%

I want to note that at the bottom of the list are sore throat (43%) and tender glands (31%). These are the least common symptoms reported in the Dutch survey. That's in accordance with our clinical experience here.

But if we focus just on the Fukuda criteria, we miss a great deal that's important in pediatric CFS. Here, for example, are some symptoms identified on a symptoms checklist 90 (SCL90), which is a survey that measures the degree of distress caused by 90 different symptoms. We administered this questionnaire to an ongoing pediatric CFS cohort study we're conducting, and these are the results of the first 55 pediatric CFS patients:

- 70% reported dizziness as a symptom they were having with at least moderate severity
- Nausea, 56%
- Temperature fluctuations, 48%
- Numbness and tingling, 48%
- Heart racing, 43%
- Shortness of breath, 37%
- Chest pain, 37%

- Diminished appetite, 24%

...all indicating that adolescents with CFS have a number of common manifestations that go well beyond the criteria composed by Fukuda and colleagues in 1994.

A case definition proposed in 2006 attempts to acknowledge the richness of the symptom groupings and requires that in addition to the familiar categories of fatigue, post-exertional malaise, unrefreshing sleep, pain, and neurocognitive problems that patients report symptoms for two of the three categories that include:

- Autonomic manifestations such as light headedness, palpitations, and shortness of breath
- Neuroendocrine manifestations such as heat intolerance, subnormal temperature and temperature fluctuations, or impaired appetite
- Immune manifestations such as sore throat, tender glands, and sensitivities to different foods

### **Associated Examination Findings**

Some of those symptoms foreshadow what I want to say about the associated exam findings. Many of you will remember papers from the early 1990s that emphasize the low yield of the physical examination of patients with CFS. The implication was that this is just a nothing disease that was largely psychosomatic in origin. The data we have now do not support this assertion if they ever did, and that is especially the case with adolescents.

One of the most readily apparent abnormalities on the exam that we started to observe in the early 1990s in those with pediatric CFS is that the resting heart rate is often elevated and you can identify heart rate and blood pressure abnormalities after prolonged upright posture. Those are highly prevalent in the pediatric population with CFS.

I have listed a couple of studies on the prevalence of these orthostatic intolerance (OI) disorders in the supplemental slides in the handouts. This slide shows what can happen with heart rate and blood pressure in the two most common forms of OI, one being postural orthostatic tachycardia syndrome (POTS), the other being neurally-mediated hypotension.

The patients with POTS will get an excessive increase in heart rate when they stand, shown by the black line in that graph. We define that excessive rate as a greater than 40 beat increase in heart rate between supine and standing. It also has to be associated with orthostatic symptoms, including fatigue that gets worse, light headedness, mental fog, and headaches.

The hypotensive patients usually develop a profound drop in blood pressure (shown in light blue on the right hand side of the panel) and also have reproduction of their orthostatic symptoms with upright tilt.

Despite what some of the literature says, these two conditions overlap substantially. They're not mutually exclusive. Fortunately for patients, the treatments are almost identical. One of the striking physical findings in the patients with CFS and OI is that we note a purple discoloration of the dependent limbs called acrocyanosis. [Referring to slide] On the left is the hand of a young woman who had been standing for just a couple of minutes. That's my hand behind hers as a color comparison. On the right hand slide you see three pale areas on the lower part of her leg where I pressed my fingers in, stepped back, picked up a digital camera, focused it, took the picture, and there's still no capillary refill several seconds later. That's a profound abnormality. If it appeared in our intensive care units, the patient would be on a dopamine drip. We were very impressed with that when we first saw it.

In addition to this overlap between OI and CFS, a little over a decade ago we started to notice that we were seeing a number of patients in CFS clinics with a genetic disorder of the connective tissue called Ehlers-Danlos syndrome (EDS). Certainly we were seeing more of these than we would have expected by chance. Those with EDS have stretchy skin, very loose and hypermobile joints that often dislocate easily, and delayed wound healing. Related to the circulatory problems, patients have a very early onset of varicose veins. Their vessels are much more compliant and stretchy than those who do not have EDS. They've always been reported to have chronic fatigue and widespread pain reported in the genetics monographs as being of uncertain cause.

I want to show on the next slide examples of how we measure hypermobility. This is a slide showing some of the items that comprise the nine-point Beighton score for hypermobility. You get one point for the ability to bring your fifth finger past 90 degrees, one on each side; you get a point for the ability to bring each thumb to the forearm; and a point for more than 10 degrees of hyperextensibility of each elbow and each knee. The ninth point is for the ability to bend forward and place your palms flat on the floor.

If CFS patients were anything like healthy individuals, we would expect them—after several months of inactivity—to be even less flexible than the general population rather than more. But here is what we found when we examined things systematically. This was a study that compared 58 consecutive adolescents who came to see me for CFS and 58 healthy controls. The Beighton score is on the X axis. You can see the distribution of these two populations is entirely different. Fully 60% of those with CFS met criteria for joint mobility versus just 24% of the healthy controls. Very similar to other population-based studies in the controls. This points out that this trait—joint hypermobility—is present from birth and precedes the onset of CFS, so it constitutes a risk factor for the illness.

The synthesis I would make of the pediatric CFS exam findings is on this slide:

- All studies in which the response to upright posture has been measured in adolescents with CFS report higher rates of orthostatic intolerance syndromes.
- We know that upright posture consistently aggravates symptoms of the illness.
- All studies that look at autonomic abnormalities that can be measured with heart rate variability in adolescents report a sympathetic predominance.
- We know that dependent acrocyanosis is a common sign.
- Joint hypermobility is a risk factor for both CFS and OI.

In contrast to the papers from the early 1990s, it turns out that there are a number of objective abnormalities on the examinations of adolescents with CFS. If Yogi Berra doesn't mind, I want to quote him as saying, "You can observe a lot just by looking."

### **Impact of CFS**

As mentioned earlier, CFS is a heterogeneous condition, so how it affects an individual will differ depending on:

- The developmental circumstances of the child
- The duration, and especially the severity, of the illness
- The number of physiologic disturbances that converge to create CFS symptoms

...all of which are modified by the quality of support from family, friends, and especially the medical profession.

In adult CFS literature, several studies by Tony Komaroff and other in the 1990s showed that adults with this illness would have lower scores on quality of life than patients with multiple sclerosis (MS) and congestive heart failure. Really quite impressive findings.

In children, the comparisons of health-related quality of life are aided by the development of age-appropriate valid instruments, one of which is called the PedsQL Survey. This slide shows you the work from the Cincinnati Children's Hospital where the group there compared a large number of patients using the PedsQL scale. On the far right are the healthy children, who have a score in the 80s. They looked at the PedsQL score in sickle cell, diabetes mellitus, eosinophilic gastrointestinal disease, and cystic fibrosis.

I then took their data, and since we were using the same questionnaire, added in on the far left the CFS data. It is quite striking to see that the quality of life in those with CFS is much lower than for children with any of these other conditions. The Cincinnati study included children who had renal transplants and seizures as well, and the CFS patients fared worse. When you look at the subscales of this PedsQL, you see that the physical function is very low as is the scholastic function compared to our group of healthy controls. CFS patients have a bit higher scores in emotional, social, and psychosocial function. The implication is that the biggest contributor to CFS patients' scholastic problems is their physical function.

This point has been made by Dr. Crawley in England. Here's a summary of a study that she did in 211 of her pediatric CFS patients at the Specialist Clinic for CFS in the United Kingdom. The patients were 69% female. The striking feature of this slide is that close to 57% attended school 20% or less of the time. Dr. Crawley was able to show the obvious implication that those with better physical function were more likely to attend school and that those with worse physical function were the ones who were missing school more. There was absolutely no association between the attendance rates and things like anxiety or school refusal, gender, age, or family history of ME/CFS. The dominant influence, again, was the severity of the illness.

Another way of measuring the impact is using functional disability inventories, which is a well-validated, 15-item measure of how a child does with daily tasks such as walking up stairs, doing something with a friend, being up all day without a nap, being in school all day, doing homework, or shopping. Note the striking difference here between our CFS patients and the healthy controls, most of whom have absolutely no impairment. These findings I'm showing you are all statistically significant to the .001 level.

We use the Wood Mental Fatigue Inventory as a way of measuring cognitive symptoms. Higher scores mean worse function. The median score for those with CFS was 12 and for the healthy controls, it was zero.

### **Service Gaps**

In the last couple of minutes that I have, I want to briefly mention what's possible with some individualized multi-modal treatment. This slide looks at the overall wellness scores, a uni-dimensional measure of well being that goes from zero to 100, with 100 being as good as you can imagine feeling. In our cohort study, the wellness score at onset was in the low 50s. Big gains were achieved with multi-modal treatment in the first six months with refinements over the next 18 months. This study is coming to a close and I don't want to suggest that everybody got better, but there is a big potential for overall improvement with individualized treatment.

But that kind of care is not available to many people due to the gaps in our medical services for CFS. Your comments about what the situation is in Mississippi are pertinent here. I'm not sure we're that much better even in the Maryland/D.C. area. When I spoke about the care of children with CFS to CFSAC back in 2005, I used this slide. And frankly, despite a lot of gains in knowledge about the illness, not much has changed in the past seven years. We continue to have a striking mismatch of the number of patients and the number of providers. As an

example, I get 25-30 requests for new CFS evaluations *each week*. I'm a solo guy with no nursing help. I can't safely fit in more than 50 new patients in a full year, but I'm getting that many in a two-week span. Because insurers in this country don't reimburse in a manner commensurate with the complexity of care, there are few hospital and university CFS clinics. We don't have any CFS training grants or federally-funded treatment centers for children as there are in other countries that might help with the advancing and translation of knowledge to the primary care physicians.

Against that service gap, I am worried about the unintended consequence of changing the definition of pediatric CFS to require three months of fatigue rather than six. Let me explain that. I'm a pediatrician, I'm an advocate for the needs of children with CFS, and I'm sensitive to the intent of that proposal, which I think is to encourage earlier treatment of those with fatigue of just three months duration. I would ask, why restrict that to children? I think this suggestion should apply for adults as well to begin treatment earlier. For that matter, we should be attempting to understand the cause of fatigue and do something at a treatment level when the symptoms first arise. Why wait three months?

Let me look at one of the problems that can occur for our sickest patients if we change the definition. This is a study drawn from the work of Katz and colleagues in Chicago. They did an excellent cohort study of people with acute EBV infection and followed them to see how many of them met the criteria for CFS over the next two years. We can assume that fatigue is there in about 100% of the patients with their acute mono. Katz and his colleagues found that 13% met CFS criteria at six months. If you go back, you could assume that somewhere around 50% of those with EBV would still have fatigue at three months. If those patients start requesting CFS consultations from the limited numbers of providers, we then dilute the clinical roles with people who would get better spontaneously over a three-month span and I think that will mean that those who have CFS that lasts longer than six months will have a harder time getting treated. It will delay their evaluation, potentially.

That's a problem only because we're currently so deficient in meeting the needs of those with CFS at all ages. That is a social/political choice we continue to make to the detriment of young people with this illness and I think we can do a lot better.

Let me end with a slide that thanks the many people who supported our work. We had grants from the National Institute for Allergy and Infectious Diseases, the Department of Defense, and the CFIDS Association of America. The Sunshine Natural Wellbeing Foundation has allowed me to continue doing this work with their support of an endowed chair. The CFS cohort study would not have been possible without the efforts of Colleen Marden, the mother of one of my patients, who volunteers eight hours a week to help keep the charts straight. We've had a number of summer students who have been very helpful in the analysis and a number of families as well as patients who have contributed to our understanding.

## **Committee Discussion**

**Dr. Levine:** Thanks for a wonderful presentation. I have often been curious to know why pediatric CFS presents more commonly, as you intimate, with autonomic symptoms versus adult CFS. And secondly, I want to know if you actually tried some interventions on some of the patients who presented at three months as opposed to six months and saw that they improved.

**Dr. Rowe:** We would look at them the same way we would those who have had it for six months and try to ferret out which other comorbid factors are the most important. For example, are they having migraines that need to be treated? Is there any OI, and can we treat that? Really, the whole range of other factors that might overlap.

In terms of the differences with pediatric CFS or adult CFS patients, our studies showed a fairly high rate of OI in the adults. We have had very few adults who when you put them on a tilt table did not at least develop worse symptoms. They would describe it as having a bad day with their CFS. In a randomized trial of Florinef, where we did a tilt test in the study as an outcome measure, two months later, very few people wanted to come back in for that tilt test. It was an unpleasant experience. It reproduced their symptoms. They felt unwell. I think that's an important piece, even though the prevalence of confirmed OI is lower in adults than it is in children.

Why that might be could be related to factors of the period of rapid growth or the hormonal disturbances of adolescence. One of my genetics colleagues—Barton Childs, when I shared an office right next to his—would say that we won't understand much about CFS until we understand the individual components of it. He likened it to our century's version of dropsy—a term for a condition that we don't use anymore for swelling in the legs. One of his concepts was, the earlier the onset of the illness, the more likely it was to have a genetic component. Maybe part of what we're seeing in the pediatric presentation is more of this hypermobility, more of this connective tissue laxity that predisposes people to blood pooling in the limbs. We don't really know the answer to that. Those would be my speculations.

**Ms. Holderman:** I know that you spoke about the gender ratio in children. I read that it could be a pretty even split—50/50—in children. Can you speculate on why the statistics for adults are not the same? Might it be the stigma for adult men who don't want to come forward and get a diagnosis or misdiagnosis? What do you think accounts for that discrepancy?

**Dr. Rowe:** As somebody who goes to the doctor about every five years myself, I think that those concepts about males going to a physician are true, so there may be some undercounting of men with CFS. But I think the ratio of male to female is similar in pediatrics and the adult population. There are problems with getting an exact measure of it. I think that some of the population-based studies have had a lower female to male ratio than some of the clinic-based studies, but I think it is more common in women of all ages.

**Dr. Dimitrakoff:** Thank you for a fascinating presentation. I have a question related to the connection between EDS and CFS. You mentioned that we didn't actually know much about this in the past. I'm wondering if there have been any more recent genetic insights gained from studying this overlap.

**Dr. Rowe:** People have looked a bit more. Our paper was the first to draw attention to the fact that a lot of people with EDS met the CFS criteria and vice versa. A group from Dr. Jakov's study in Israel showed that if you look at people with hypermobility, they had a lot of dysautonomia, they had excessive heart rate responses to low doses of beta-agonist drugs, and so on. The most common form of EDS is the hypermobile type, and there's no gene associated with that. There's a rare vascular form of EDS that I believe the gene is identified for. Hypermobility is a trait that is very common in the population. If you look at children in high school, 20% will be hypermobile. They may be completely healthy because they're the dancers, the gymnasts, and the swimmers. It's not necessarily a medical problem. There must be something that in addition to hypermobility creates the risk for the development of CFS.

**Dr. Fletcher:** This is the main thing I look at. I'm interested in biomarkers. I think in pediatric CFS this has been a not very well studied area. My lab has worked with Katz on his post-infectious model in adolescents. Unfortunately, the number of samples we've had to test was small. What I think an extremely important thing in pediatric CFS would be to have efforts made like those being done right now for adult CFS to establish large biobanks of material that are well-characterized patients. That would allow us to do serious work on gene expression proteomics so that we can come to an understanding of the differences and the similarities of these pathways and molecules. I think that is what will lead us in the end to treatment.

**Dr. Rowe:** I would concur. I think that developing a biobank would be great. The part that I think we are really missing is the clinical expertise to do the careful characterization. I believe that mine is the only academic CFS clinic in the country. Some have accused me of swimming upstream. But it's really tough to get administrators to fund clinics like this. The need is there. The money has not been. And the will has not been. Unless we have experienced people helping get kids examined and characterized, we would get a mess of data in biomarker studies because we might have the wrong diagnosis. Those two enterprises must go hand-in-hand. But I would agree with your point that that would be likely to lead somewhere.

**Dr. Casillas:** Thanks for an enlightening discussion. I'm interested to find out if there's any evidence of childhood depression as a marker, as a precursor, as part of the natural history of this disease that would help identify different categories at a potentially early stage.

**Dr. Rowe:** One of the problems in case definition, as came up in one of the CDC studies, is if you define fatigue very broadly, that's a key symptom of depression. I think one of the least useful pieces of work that's been done was the one that suggested that childhood sexual abuse was a risk factor for CFS. It may be a risk factor for depression. That makes a tremendous amount of sense. But we just don't see high rates of physical or sexual abuse in the pediatric CFS population. They don't see it in Oslo, Norway, where they've been doing studies looking at this.

Some of the problem with the epidemiology of differentiating CFS from depression has to do with the difficulty of being certain about the cases and how you define them. It's not uncommon for people with CFS to develop depression if their function remains at 50% and worse than kids with seizures and renal transplants. That I think most parents understand. They'll say to me in the clinic, "Well, who wouldn't be depressed?" But it's not a universal finding in the clinic. Most of the studies of CFS and depression show that there is a frustration and demoralization, but the level of symptoms usually does not reach the kind most psychiatrists are seeing.

We do have some who have what looks like full blown major depression and features of CFS, but they're by definition diagnosed with major depression. Overall there are some theories that inflammation after infection affects cytokine production in the brain, which can lead to sickness behavior that looks a lot like CFS and then eventually to depression if there are genetic risk factors. But I've only seen that as a model, not something with data attached to it, at least in the pediatric field.

Anxiety is another one that is interesting because it appears more commonly than expected in those with any OI disorder. We think part of that is the shared catecholamine excess of anxiety condition and OI. When you have recurrent syncope, you get epinephrine levels that go sky high right before fainting. Anyone who treated asthma back in the era when I trained, we would give children three doses of epinephrine subcutaneously for their asthma realizing that they would all get shaky, apprehensive, and it was a very uncomfortable sensation.

I think there is some sort of overlap between the physiology and expression of anxiety, but it's not by any means a universal feature. There are some who have argued—mostly in Britain—that CFS is some manifestation of generalized anxiety disorder. I don't think the evidence is there to support that concept.

**Dr. Belay:** Thank you for a very good presentation. I am curious about the level of engagement of the American Academy of Pediatrics. They are very influential among their members and they get involved in a lot of other diseases. From your perspective, what's their level of engagement with CFS?

**Dr. Rowe:** I'm not too familiar with whether or not they even have any initiatives on this.

**Dr. Vincent:** This was a great presentation. I have a couple of questions. One is, is the OI or excessive heart rate definition for kids different from adults? Can you comment on the multi-modal treatments and whether or not they seem beneficial in your clinic? My comment is that I believe we have a pediatric CFS clinic and we now have a three-week rehabilitation program for kids with pain and fatigue.

**Dr. Rowe:** That's very exciting. Now we have two. I think the train is moving out of the station—two national clinics. Excellent. In answer to your question about POTS children and adults—most of the prior research was done using the adult heart rate change definition of a 30-beat increase in heart rate. Many applied that to kids until work came out last year from the Mayo Clinic showing that about 40-50% of health adolescents have up to a 40-beat change in heart rate. There was probably, over the last decade, a bit of over-diagnosis of POTS. We now require a 40-beat difference.

In terms of multi-modal treatment, we focus a lot—but by no means exclusively—on treating the OI. That treatment has a fair bit of overlap with what's considered cognitive behavioral therapy (CBT) in other settings. For example, we want children not to be sleeping for more than 12 hours. They have to get up and get hydrated or their OI gets worse. Inactivity, we tell them, is the enemy. You've got to—within the limits of what you can tolerate—get moving. The challenge is to take somebody who is very debilitated and intolerant of exercise and get them to the point where they can take advantage—as we've seen in other studies—of the graded exercise that makes sense for all of us as human beings. So we use OI treatments as a bridge to that.

We find manual forms of physical therapy developed over the last 20 years to be helpful, especially for the most impaired patients. That's the subject of some of our current research that the CFIDS Association is funding—to look into these areas of restricted range of motion and see how we can improve those. We look at allergies, we look at migraines, we look for as many other comorbid factors as we can and try to treat what seems to be the most important one at each juncture, all the while encouraging gradual increases in activity.

## **Introduction of Dr. Houle**

**Dr. Marshall:** Dr. Houle is the associate division director of the Department of Education's Office of Special Education Programs where she oversees programs for children with disabilities and their families. The programs are funded through the Individuals with Disabilities Education Act (IDEA), Part D. Her division—the Research to Practice Division—oversees these IDEA program areas and their contributions to best practice, professional development, and outcome accountability for children receiving early intervention, special education, and related services. She and her staff provide expertise to federal and state agencies to coordinate and maximize provision of services for children with disabilities. She has an M.S. and a B.S. degree in communication disorder from SUNY—Buffalo and the University of Alabama and a Ph.D. from American University. She became familiar with CFS after a close relative was diagnosed with the illness.

## **Addressing the Needs of Children with Chronic Fatigue Syndrome**

**Gail R. Houle, Ph.D., Associate Division Director, Office of Special Education Programs, U.S.  
Department of Education**

I'm honored to be able to present some information that I hope will help the community families who are challenged by providing care for their children with CFS. My nephew was diagnosed with CFS. I observed firsthand the effects it had on the family—the stressors, the financial effects, the parents' work life, the family's social life—and I think those stressors can be mitigated somewhat. Hopefully the information I provide today will have a takeaway that will enable you to move forward if you are looking in the arena of services and maintaining your child in a school setting.

There are two education and rehabilitation acts that I'm going to talk about. The first is IDEA and the second is Section 504 of the Rehabilitation Act. I'll talk about how each of these laws could impact your child with a disability or a special healthcare need. I also want to say that I certainly give credit to the cooperative agreement we fund through the Parent Training and Information Centers, who helped put together this slide presentation. They did a lot of hard work on our behalf. This was done by the National Parent Technical Assistance Center in Minneapolis, MN.

As I probably don't need to tell you, according to the advocates, we have been told there's often disbelief that a child has CFS. Therefore:

- The first thing to have is the medical diagnosis from a medical provider, because schools are not equipped to make a diagnosis of CFS.
- The next point of contact once you have your diagnosis is with the school nursing office or the school nurse.
- Then you need to look at accommodations or modifications. The team—which may include the school nurse, teachers, and administrators—look at the accommodations and modifications your student may need to be successful in school, keep up with their work in school, and continue their psychosocial development. I was taking notes when Dr. Marshall spoke, and he stressed there's a range of differences in some of the presentations, needs, and accommodations that individuals with CFS need. For us, that difference translates into "individualized." Our services are about individualized services.

## IDEA

- The IDEA has been around in some form since 1977.
- It covers children ages 3 through 21.
- There are 14 categories of disability. In order for your child to be served and be eligible for services under the IDEA, the most likely category for a child with CFS is "Other Health Impaired (OHI)." A student who has an "other health impairment," is likely to be eligible for special education services to address his or her educational, developmental, and functional needs resulting from the disability. We heard earlier about the functional assessments that are done for people with CFS. This is very important. We're not just talking about academics. We're talking about something that you need to succeed educationally and developmentally—the functional competence or support for your needs.
- When your child has a medical diagnosis of CFS, you set up a meeting with the school nursing office and talk about your child's needs. Some of the issues that you feel your child needs modifications or accommodations for might be:
  - The length of a school day
  - A rest break after lunch with the school nurse
  - Test scheduling, including rescheduling a test if your child is not up to taking a test on a particular day.
  - Homebound instruction - If a student is not well for two straight days, by the third day many school districts have a policy that they begin homebound instruction if it looks like the child may have a chronic condition or disorder. In one case, a student's peer became an advocate for the student with CFS. The peer knew the struggle that the friend was having and became a strong

advocate. That's a wonderful goal to think about, whether that's possible for your child in your school.

- The nurse is an integral member of your Individualized Educational Plan (IEP) and 504 team and should be assisting the student to advocate for his/her modifications, accommodations, flexibility, etc. The nurse should be on the side of your child at the school. That's what you should expect for your child from a school district once you have that medical diagnosis and your child obviously needs accommodations.
- IDEA defines OHI as having limited strength, vitality, or alertness. CFS is not listed as an example in IDEA, but the examples are not meant to be exhaustive. They are only examples of OHI diagnoses that make a child eligible for special services, accommodations, or modifications. The conditions that are listed are acute chronic health problems such as asthma, diabetes, epilepsy, hemophilia, leukemia, heart condition, nephritis, and lead poisoning. I want to stress again that these are only examples. CFS can qualify as an OHI if you have your diagnosis from your medical doctor and you need accommodations.
- The definition of any disability under IDEA has to adversely affect a child's educational performance because IDEA is about supporting a child's successful educational performance and his/her development.
- Conditions not listed in IDEA that qualify include CFS, bipolar, and neurological disorders.
- In determining eligibility under IDEA:
  - Ask, is my child's educational performance adversely affected?
  - Find out about evaluation results. Some of those will come from a comprehensive evaluation such as Dr. Rowe does. You may not have access to that many assessments in the medical arena, but that should not disqualify or limit you from presenting the diagnosis and requesting what your child needs in terms of accommodations to be an effective student.
- When health affects school attendance, public schools remain responsible for providing services to children who are homebound or hospitalized based on individualized needs. I've heard cases in my own family where the parents did not know that they were entitled to this. Some of the financial stresses were due to one of the parents staying home to tutor the child. If you would like to do that, there's no prohibition against it, but the responsibility for your child's education—even if he/she cannot attend school—is that of the public school system.
- You always start with your student's school personnel. With CFS, as I said before, I would try to go with the nurses and medical personnel.
- For children who are IDEA-eligible, their needs are arrived at jointly by a school/parent meeting and are formalized in an IEP. When you start the ball rolling with the school system, they will—with you—examine the medical information, including the testing results that you have brought in; look at your child's grades; determine whether they recommend any other assessment; and get a whole picture of your child. If, indeed, your child qualifies for what we call special education under the OHI category, your child will have an IEP.

## **Section 504**

- Your child may not qualify for an IEP. The restrictive delays in functional ability may not be there but you still know that your child—in order to maintain his/her status and not fall behind—is going to need

- Schools have to provide services under Section 504. The law prohibits discrimination on the basis of a disability by any program or activity, including schools, that receive federal financial assistance. Of course public schools do, and many private schools do as well.
- What 504 says: “No otherwise qualified individual with a disability in the United States shall, solely by reason of his or her disability:
  - be excluded from participation in
  - be denied the benefits of, or
  - be subjected to discrimination

...under any program or activity receiving federal financial assistance.”

- This is a diagram that gives you a graphic representation of the population of students with disabilities receiving special education services as well as students who do not qualify because the disabilities are not profound enough for special education needs, but who do need modifications and home tutoring. The smallest group with the most significant disabilities qualifies for services under the IDEA. You have a fairly larger group of students who qualify under 504. Their disabilities may not be having a profound impact right now, but the disability is influencing the students’ participation in school activities and academic settings. Then you have the group of students with disabilities that have not manifested any educational impact or modification need within the school system. This graphic is not accurate percentage-wise but it gives you a pictorial idea of where the most severely challenged students will be getting their services under the IDEA.
- This is a side-by-side comparison of Section 504 and the IDEA:

#### **Eligibility - 504**

- General disability definition to receive 504 services that don’t necessarily have to be provided by a special education teacher. The school can send a homebound teacher who works as a liaison between the home and the school and who tutors the student.

#### **Eligibility – IDEA**

- More specific. There are 14 disability categories and your child has to be evaluated by medical and educational teams and in need of special education services that can only be provided by a special education teacher.

#### **Evaluations – 504**

- Initial evaluation required. The only requirement to maintain those services would be periodic evaluations. The team can determine the timing. It is not specified in the law.

#### **Evaluations – IDEA**

- A child has to be evaluated initially by stringent criteria and requalify every three years under the same criteria.

### **Free & Appropriate Public Education (FAPE) – Section 504**

- Both Section 504 and IDEA require that your student be provided with a FAPE as determined jointly by the school team and the family. Under 504, the support and services must enable a student’s needs to be met as adequately as those without disabilities. An example is sending a homebound teacher if your student is having a period of time where he/she is not able to go to school. This would not necessarily be a special education teacher. School systems have special faculty for homebound students.

### **FAPE – IDEA**

- A FAPE is provided under the IEP from which the child would receive his/her educational benefits. Everything is written down and signed off on. Services would be provided by a special education teacher.

### **Plan Enforcement – 504**

- The U.S. Department of Education Office of Civil Rights enforces Section 504 of the Rehabilitation Act. If your child is not getting or ceases to get the accommodations that were planned for him/her under the Section 504 plan, your redress would be to the Office of Civil Rights. Your child in that case would be determined to be discriminated against just as he/she would be if he/she was an adult under the ADA. It’s a civil rights violation.

### **Plan Enforcement – IEP**

- The IEP describes the special education your child is receiving under IDEA. If you are looking for redress for your child’s special education services, you go first to your local education agency, which is your school district, and then to your state. Your state education agency monitors your school district for the federal government. We monitor the states.

### **504 Definition**

- The 504 definition is less stringent. In determining eligibility you would ask does the student:
  - Have a physical or intellectual disability
  - that substantially limits
  - one or more major life activities
  - or has a record of having an impairment or is regarded as having an impairment?

I do think that many times children with CFS would have substantial limitations on life activities that would need to be accommodated by the school district.

- There are two parts to the definition of disability under Section 504:
  - Part 1: The definition of an “impairment” is less stringent than special education requirements and reads: “any physiological condition that affects a bodily system or any intellectual or psychological disorder.” Intellectual fuzziness, memory difficulties, anything like that will qualify you for accommodations.

- Part 2: A “substantial limitation” is more than a *material* limitation but less than a *severe* limitation. This includes substantially limiting impairments that may be episodic or go into remission, such as cancer or depression. If you have a disorder than goes into remission and then returns, you still qualify for services.
- Public schools need to be very responsive to 504. Civil rights laws—including 504—provide equal opportunity and prevent discrimination based on disability. The counterpart with adults is the ADA. Public schools must provide a FAPE; an appropriate education that meets the student’s needs; due process; a plan in place; and a right to redress if you don’t think it’s correct. The student must be with his/her non-disabled peers as much as possible, which I’m sure is what you want. You need a referral—your medical diagnosis—and an evaluation, which very well can be your medical diagnosis. The team gets together; they determine that yes, this child is eligible for modifications; they develop a plan, then review, and reevaluate.
- A takeaway that I would like you to have is an awareness that there is a Parent Training and Information Center in every state. We fund them. If you have any questions whatsoever, go to the website I’m going to give, look up your state, contact these people, and they will help you get the assistance you need from your school. This is what they do. Their website is [www.taalliance.org](http://www.taalliance.org).

**Dr. Lee:** There is lots of information on those slides. They will be posted on the CFSAC website.

### Committee Discussion

**Mr. Krafchick:** I want to thank you for the presentation. I’m sorry we didn’t make more time for you because I think this is a very important issue for all children who are in schools trying to learn with this condition that interferes with attendance and other problems. I know that with an IEP evaluation, having the medical diagnosis is the first step, but then also having the documentation to prove to doubting people that the person has problems and is not just slacking off is not available in all communities, whether you get a tilt table test or a physical capacity evaluation or a neuropsychological evaluation. Those are expensive. What resources are available to document the disability to the satisfaction of the doubters in the system?

**Dr. Houle:** Under the law, the school does have to pay for certain types of evaluations. One of those would be a functional evaluation; one would be an academic evaluation. If you bring your medical evaluation and they say, “I’m not really sure about this, where’s your other proof?” then you say, “I’m referring my child to you for an evaluation in the functional and academic areas to determine if there are any deficiencies or action needed to prevent any deficiencies.”

**Mr. Krafchick:** Some of these are rather expensive. A neuropsych could run \$3,000 and most parents aren’t able to drop that. Is the school obligated to do a referral to a neuropsychologist to do that kind of evaluation if the cognitive problems are significant?

**Dr. Houle:** I cannot give you a yes or no answer because we have federal laws for education but don’t control exactly the way they go on in a certain school. It depends on your school and your school district. If they feel like they can provide an evaluation that’s functional; if they feel their psychologist can provide an equivalent evaluation; then you would not have to pay for a private evaluation. It’s a discussion that has to be had and a decision will be made based upon the individual case.

**Mr. Krafchick:** Can a district meet their obligations by referring the child to an online program without personal teaching opportunities?

**Dr. Houle:** Your child is entitled to be in the least restrictive environment. That means an environment where peers your child's age are found. If that's not the first choice for you or your child, that is not something that you would have to accept. You would then have to have accommodations for your child to be in that least restrictive environment, which is the school. You have these conversations with the team and you can also bring in and consult with an advocate from the Parent Training Information Center in your state. They'll have some insights on how this goes on in your state, what the locals usually pay for, and be able to advise you specifically. They are tenacious. They will not give up with your child not getting the services he/she needs. Your child is entitled to be in the least restrictive environment.

**Mr. Krafchick:** The least restrictive environment means what?

**Dr. Houle:** The least restrictive environment that the child is able to benefit from educationally. I'm a little bit confused by your question because some families and teams may be very happy for the school system to provide distance education for their child because its flexible, this child does is on his/her own terms, parents can help, you can have the home tutor help. That may be the solution you want, and then that would be the least restrictive environment for your child because your child is not up to functioning in a school with his/her peers at this time. It may be next month; it may be two more months.

**Mr. Krafchick:** Right. But there are also problems with what the programs are and what they do. If there's an obligation to provide a home tutor to help a child with online learning, that would be different.

**Dr. Houle:** There is. Your child should have the same standard of educational resources. There shouldn't be a difference. If you see that there's a difference, you need to point that out. You need to get together with your advocate, you need to have another meeting, and you need to say, "I would like to have a home tutor to evaluate my child personally as opposed to through a computer."

**Mr. Krafchick:** If the school refuses to comply, what are the options are available?

**Dr. Houle:** Your Parent Training and Information Center will tell you all the options that are available to you, but parents have redress under each of these laws. You have the right to appeal. Under Section 504, it's a civil rights violation. Under IDEA, you have a due process hearing. I can't get into a complete answer to the question right now, but if you're on this path, and hopefully you're in contact with your parent advocate from your Parent Information Training Center, they are guiding you specifically all along the way in issues such as should you go to due process and can the school system do better?

**Dr. Levine:** Thank you for a good presentation. I'm concerned because what you have on the slides there are asthma and lead poisoning and so on, which are difficult childhood diseases, but the complexity of CFS, I think, is certainly greater. I'm concerned about the types of evaluations that kids might get—whether they truly reflect the cognitive problems that these kids have and whether they're adequately addressed with the proper home tutoring. Does the person who gets assigned to the home tutoring know anything about these types of problems? And also the frequency of the assessment—did you say tri-annually?

**Dr. Houle:** If your child is receiving services under special education—which is the more significant—the team meets no less than once a year. You discuss the child's program. But the full-blown evaluation is required at least every three years. Under 504, it's much easier to update. It can be updated periodically. Under 504 and IDEA, any time you want to provide additional information, any time you have questions, any time you want verification

that your child is getting effective services that are on par with what's going on in the school, you have a right to call the team together and pose those questions and get satisfactory answers.

**Dr. Levine:** I'm just concerned about who reports whether or not the child is falling behind.

**Dr. Houle:** When you are the parent, the school system wants you to be very involved with this team. They have to keep evaluating your child to make sure that accommodations and modifications are correct. In an ideal situation, the communication is so good that the parent can contact the school and say, "My child would like to take advance placement English next year. Is the service that he/she is getting equal to the other students being prepared to take advance placement English?" And the answer has to be yes or the 504 plan has to be revisited. You may have to contact your advocate. Hopefully you never have to go to the civil rights case violation.

**Ms. Holderman:** That was a great presentation, thank you. Even though all of these special programs are in effect, what I have been hearing, especially over the last two months as we developed the agenda for this pediatric ME/CFS session, is so many nightmare horror stories. Parents still are dealing with getting accused of Munchausen by proxy. Children are being taken away and things are in the news about cases where the child is accused of being school phobic. If these are federal laws implemented by states, what happens when things like that do happen? Does the federal government step in and intervene? That's one question. The other question is, does the Department of Education have any programs that help educate school systems about complex diseases like CFS?

**Dr. Houle:** To the last question, yes, they do because I oversee that program and I have to tell you again, it's the Parent Information Training Centers located in every state. They do training of parents, parent groups, teachers, and administrators. They'll meet one-on-one; they get groups together. They would get all your child's teachers together and do a session on CFS if need be.

Now, back to your questions about whether the federal government steps in at the local level. Not under IDEA. I understand because my sister-in-law was accused of Munchausen by proxy and it took her a long time to finally get the diagnosis for her son. Very challenging. I hate to sound like a broken record, but the best thing you can do is call that parent center and say, "I'm having a lot of problems, these are what they are, and I need assistance."

**Ms. Holderman:** That's the website that's in your slide? How is that promoted in the school systems? It's probably a great resource that people don't know about or they wouldn't be falling into these types of situations. How is that promoted by the government?

**Dr. Houle:** There are links to it on our home page. But in terms of a huge outreach campaign, it's usually brought to the attention of the school district through special educators.

**Dr. Fletcher:** At the state level and the federal level there's talk about vouchers for education. In your opinion would this be a good trend or a bad trend for special needs children such as those with CFS?

**Dr. Houle:** I don't have an opinion on that. I work for the administration and I carry out the agenda and work of the administration in education in whatever form that takes.

## **Break**

## Public Comment

A summary of public testimony appears at the end of this document.

## Housekeeping

**Dr. Lee** reminded meeting attendees about:

- Turning cell phones on vibrate
- The necessity of an escort to move throughout the building, including across the floor to the cafeteria for lunch
- The tight schedule that requires the meeting to reconvene at 11:15 am; a lunch break from 12:15-1:15 pm, and a panel involving CFS patients and family members convening at 1:15 pm
- A photo opportunity for CFSAC members after the housekeeping reminders
- The fact that Dr. Lisa Corbin could not attend the day's sessions because of prior commitments, but she would be attending day two and would be sworn in then.
- The CFSAC listserv, which would be distributing an announcement of the availability of Dr. Houle's slide presentation. Dr. Lee noted that flyers at the back of the room describe how to sign up for the listserv. She said that she looks forward to the listserv as a way to improve communication and provide more information.

Dr. Lee commended "the team that put this all together. I think they deserve a round of applause. Marty Bond is the leader of that group—Joyce Grayson, Lynn Price, and Brittany Irving from our contractor have really made all this happen." Dr. Lee also thanked volunteers from the Office on Women's Health who took time from their busy schedules to escort CFSAC meeting attendees throughout the building.

Dr. Lee explained that Dr. Koh slightly misread Dr. Rose's employment status. She is retired from the Veteran's Administration.

**Mr. Krafchick** made a recommendation to include on the CFSAC website a link to the Parent Information Training Center website. Dr. Lee confirmed that the link can be placed on the CFSAC website.

## Lunch Break

## Childhood Chronic Fatigue Syndrome

**Dr. Marshall** opened the session by explaining that the childhood CFS panel discussion was the brainchild of Education and Patient Quality of Life Subcommittee Chair Eileen Holderman. The idea was to allow CFSAC members to interact with individuals affected by ME/CFS—a mother, Faith Richards Newton, and two patients, Matthew Lopez-Majano and Christina Gustavsson, two young people who are currently sufferers of ME/CFS and who came to share their story and hold a dialog with CFSAC members.

## Christina Gustavsson

My name is Christina Gustavsson and I have had CFS for seven years. I started feeling an extreme decline in my health when I was around nine years old. I remember not being able to get out of bed. It was confusing and debilitating. I went from gymnastics on Tuesday nights every week, having a complete social life, and doing normal things for a nine-year-old girl to not being able to go to the movies with my family on a Saturday.

It was really taxing on my mental health and my physical health to have a complete misunderstanding of what it was that was wrong with me. When I was diagnosed, it was easier in a way to just know that there was a name for this, but at the same time, even now, whenever I say I have CFS to people who ask, they have blank looks on their faces. They have no idea what I'm talking about. Once I said I have CFS, the immediate response is, "Everyone gets tired." The name itself is not a good description of the illness. While fatigue is a major part of it, it's one of many things that are wrong with our bodies. The name is something we definitely need to work on.

Another thing is education. I have been battling my school since I was in fifth grade. Luckily, now I am starting to get better, so I'm hopefully going to be able to go to school full time my junior year. When I was almost completely bedridden last year, I had the worst time with the school:

- We had to hire a lawyer and we had to get homebound instruction. Even online schooling, which is a normal response to this illness, doesn't work for me because I need a teacher to teach me. I'm not going to be able to just memorize things by myself online like healthy kids, so it's not a very good response to the illness.
- Another thing is teachers not understanding this illness at all. They have no idea what it is. If you say you have autism or bipolar disorder, then the teachers understand, but CFS—no one understands how to teach us. We are difficult to teach, but it's not getting addressed, I don't feel.
- Also, there's the fact of school nurses. I had trouble with them in middle school. My school nurse was not very understanding of the illness and thought that after five minutes of resting I should go back to class which is, again, not realistic for CFS patients.

Those are the major things in school that were most taxing when I was my most ill. Now, however, I have become marginally better than I was last year when I was bedridden. Just this morning, I was able to walk 20 minutes at 8:45 in the morning. But it took a lot of effort to get there, and a lot of CFS patients will never get there. Thankfully, because of Dr. Rowe's study, which I am in, physical therapy helped me a lot. I have hypermobility—I believe that's why it helped me. But there are so many other CFS patients who have things other than hypermobility. Physical therapy might help them and it might not. We need to discover more treatments to help the kids who won't get better just by physical therapy.

As far as medicine, I am currently taking Ritalin and that helps my brain, but I know other people who it hasn't worked for. I believe Matt may have tried it and it didn't work for him. We really need to find something that works for every CFS patient. It's going to take awhile, but I think it's something we need to focus on. While the illness isn't known for being fatal, it does take lives.

### **Matthew Lopez-Majano**

You'll have to forgive me if my voice doesn't come through well. I'm not used to speaking up. And also, please don't expect me to be very dynamic. I can just relate facts. I can't even relate facts, really. I can only tell you what I think, because facts require memory and memory is something I most definitely don't have. The only reason I remember the day I fell ill is because it was two days after my birthday. I got really awful pneumonia—so happy birthday to me—and I never got better.

It has taught me a new meaning of fatigue. I was a fairly active swimmer at that point. I knew what it was to be tired. I knew what it was to be exhausted. I knew what it meant to be working so hard that every part of me hurt. But to feel that way every day without knowing why I feel that way, without the exercise behind it...it was frightening, frankly.

At first it was a bit of a laugh. I got to miss school and frankly, school wasn't very stimulating intellectually or in any other way. When I had to start missing things I enjoyed—even the aspects of school I enjoyed like friends and math—then it kind of hit home that this wasn't on my terms. It's playing by someone else's rules at every moment of every day. Everything I do is restricted.

But as bad as I have it, I always know there are people who have it worse. I have never been bedridden as bad as I got. There are times I have been out of commission long enough to be considered temporarily bed ridden, but people have to live that way for months; for years.

After seven years of missing life, it's very disheartening to know that I may never get better. There may be a cure eventually, but not soon enough to help me or anyone who came before me. Seven years out of 19 years...it's about the proportions. Considering that a person isn't really a person until they're about five, then I've been sick half my life. If I can't remember the first half, then as far as I know, I've been sick my whole life. And it's just day after day of struggle.

It gets really hard to figure out why I keep going when everything I want, everything that makes me happy, feels always out of reach. When I can't even read a book, something that I enjoyed doing by age 5, then it hits me that I'm not really alive, technically. Humans are defined by their actions, so I suppose that makes me something else. If I can't act, if I can't think, if I can't...put it this way—if I died, all that would be left of me is memories, and old ones at that. And that's all for me.

### **Dr. Faith Richards Newton**

Good afternoon. My name is Faith Newton. I'm a mom. I'm also an educator, so I've got two different hats that I wear routinely. I have a large family—six of us. My eldest is 30. We adopted her when she was 16. My twins are currently rising juniors. My son is 16 and has chronic fatigue. His twin sister does not have chronic fatigue. And then our nine-year-old grandson is at home.

Besides being a mom, I'm also an educator. I was a middle school principal for many years and was the assistant superintendent of a large district. I'm currently associate professor at our local university. My specialty is education and instructional strategies. I've been doing a lot of research on CFS and how we can help our students in our schools to learn a little bit easier with the cognitive difficulties that they have. What do we do with them?

My son Michael got CFS in fifth grade. He had a gradual onset. He was sick with a mono-like virus in fourth grade and took several months to recover. Then he got it again in fifth grade and never recovered from it. I was lucky in many ways because I was working in the district at the time and knew all the teachers and everybody. We were in a small community. Our family physician knew all of us; she raised us. So it was never a question of whether he was really sick. It was only a question of what was wrong with him. From fifth grade until now—he's a sophomore—he's had CFS.

Some years he can go to school a couple of days a week for part-days; some years, in the winter months, he never went to school. Most recently he takes a weekly IV that takes three hours to get. It enables him to go to school two part-days a week. He has fulltime tutoring seven days a week. In order for him to maintain his grades and

keep caught up, he has school Sunday through Sunday, pretty much 365 days a year. The only time he is not doing tutoring or homework is maybe Christmas vacation or when we're on vacation. That has probably been the most difficult. Social life is basically non-existent. We try hard to see what we can do, but when you have a child who is that sick, it's very difficult to see what you can do.

As a mother, it's kind of heartbreaking. When you go to work and come home some days and you say, "Hey Michael, what did you eat today?" he may say, "Mom, I was just too tired to make pancakes." Did you know it takes 26 steps to make pancakes? And he's just too ill to do that. Other days, when he's feeling well, like Tina, it works out really well. But as a mother, I think it's been very difficult for the family to figure out what you can do and what you need to help your son. That's it for now.

## **Committee Discussion**

**Dr. Marshall:** Thank you all for your presentations. They were very thought-provoking for all of us. What we're going to do now is have a discussion among the CFSAC members and the three of you. If you have questions of us, you're welcome to ask those questions. I request that everyone make your questions as brief as possible and make your responses as direct as possible simply so we can get as much done in the next 45 minutes as we can.

**Mr. Krafchick:** Thanks. It's a brave thing that you do. Tina, I had a question for you because you said you had problems that made you difficult to teach. I'm wondering if you could tell us a little bit more about that.

**Ms. Gustavsson:** Sure. I would have days where I could do an hour of schooling and I would be pretty well to absorb the material. Then I would have days where I was well the entire day, then an hour before my tutor was scheduled to come, I would get too sick to be able to have her. So scheduling was difficult. I was completely unpredictable. I could be feeling well that morning and feeling horrible in the afternoon. The point is that it's difficult because I have no idea how I'm going to feel an hour from now or two hours, so it's very difficult to schedule school.

**Dr. Levine:** Tina, you mentioned that you did some physical therapy. Do you think your background being an athlete before you got ill has helped you both be compliant with it and in better shape than other people?

**Ms. Gustavsson:** I honestly don't know. All I know is that the physical therapy helped me. It was painful to exercise before, not only because of the fatigue, which would crash me and the next day I wouldn't be able to exercise again, but because my joints were hurting me so much. Because of the physical therapy tightening my joints, it really allowed me to exercise more and get better.

**Dr. Fletcher:** I'd like to ask both Tina and Matthew, would you feel like you could participate in a clinical trial if you were asked? If, for example, it had a placebo group—individuals who would not know they were not taking the drug under study. Do you think that's a worthwhile thing to do in the area of CFS research?

**Mr. Lopez-Majano:** I'm not sure exactly what you mean by how would I feel with it.

**Dr. Fletcher:** My primary question is, would you feel like you would participate in that? Is that something you would find appealing?

**Ms. Gustavsson:** I would definitely participate in a study. I'm already in Dr. Rowe's study. I believe Matt is, too. Dr. Rowe had complete success with me. Only last year I was bedridden for most of the year. I had a hard time getting out of bed. My body was completely depleted. Just a year and a half later, I'm not completely cured, by any means, but I am so much better. I do think that studies help at least try to understand how this illness works.

**Mr. Lopez-Majano:** I have been on a study before. I can't remember exactly what it was, for some reason, but it required that I go off my meds. During that week, I realized exactly how far the limited success I'd had up to that point with the meds had brought, because it hurt a lot. It was really exhausting because any time I'm not at home, I'm exerting myself. So, if you're asking about a drug trial that would probably require going off medication again, frankly this year has been a bad year for me, so I don't think I could.

**Ms. Holderman:** Thank you for your presentations. My question has to do with education, because I'm on the subcommittee for education and patient quality of life. I would like to ask the same question to all three of you. When you told your teachers that you had CFS, did they generally know what the disease was? And when you told your peers, did they know what it was?

**Ms. Gustavsson:** My mom mostly deals with my teachers, but as far as I know, they had no idea what the illness was. When I tell people, maybe 2% of the people I tell have any idea what CFS is. It's really a problem because it's also hard with friends to tell them and try to make them understand. If you haven't gone through this level of fatigue and pain and complete debilitation, it's hard to understand. When you say things like cancer or AIDS, people immediately know that something's seriously wrong, but with CFS, most people don't know.

**Ms. Holderman:** What about you, Matt?

**Mr. Lopez-Majano:** When I was sick, I was doing school part time, so I only had a couple teachers. For me, also, my mom helped a lot with dealing with them. I remember one of them didn't like me—thought I was a cheater—so of course he is the one who gets the invisible, unknowable illness. One of them just kind of shrugged and sent the school work home when I needed it. One of them seemed passively supportive. I told her I required accommodations and she said, fine. As for friends, shortly after I got sick we moved, so friends were gone for that reason. There wasn't anyone to tell, and I got in the habit of not telling anyone. I just kind of smiled my way through it. I don't even tell people anymore because the chances of finding someone who knows what it is are slim enough that I'm not going to bother with it. Because frankly, people don't believe me.

**Ms. Holderman:** Faith, what was your experience with knowledge of the illness with teachers and your peers?

**Dr. Newton:** No one has ever heard of CFS. Not even in my district where I had another family that has children with CFS who were two years ahead of us. They still don't know what it is. At every IEP meeting or every 504 plan meeting, we have to explain and reintroduce what CFS is and what kind of educational interventions can be done. It is very difficult. They also have the viewpoint Tina talked about—"that's just something you can get over" because it's such an invisible illness. It's very difficult for them to understand.

There are a lot of issues in the schools. Even as knowledgeable as I am, we needed the parental advocate in the building with us because—Tina can talk a little bit more about this—if you want to take honors classes, or if you want to take an AP class, you hear, "no, your child's too sick to do that." If your child needs an accommodation like double time on a test, teachers, school nurses, whoever was in the schools, don't understand. They think that because our students need that extra time to think—my child needs twice the amount of time to get those words out—that they're stupid. And they're not stupid. It's a matter of what's going on with the illness inside them.

We've had to do a lot of educating that way. Because maybe this afternoon he can't remember what number times 5 is 95, but he can do a complicated formula and graph it in a math equation. It's very hard for teachers and guidance counselors and psychologists to understand exactly what's going on with my son in school. It's very difficult, so we have had to educate continually on what is CFS; what does it mean? It does not mean our kids are

stupid. It doesn't mean they can't take honors or AP classes or can't do their work. The illness is what's causing these issues and we have to figure out a way to teach our kids with CFS a little bit better.

**Dr. Marshall:** Dr. Newton, first of all, forgive me for not acknowledging you as a colleague. She's an associate professor of education at Delaware State University. I apologize for not acknowledging that. As a clinician scientist, in talking to my colleagues who don't understand ME/CFS—whether they are clinicians that practice medicine or researchers working in the laboratory—I find it easiest to get to the young people. It seems like the younger they are, the more open-minded they are as opposed to the old gray hairs like me who made up their mind 30 years ago about whatever and to whom introducing new concepts is difficult.

I'm sitting here listening to you talk about the challenges with educators. I come from a family of educators. My mother and sister were school teachers. I have uncles and aunts and so on. I have several college professors. So I come from an education background. The hallmark of education is gaining new knowledge and an open-minded idea of acquiring new knowledge. Yet it sounds like the mean old doctors who don't understand or appreciate ME/CFS are accompanied by rather uninspiring educators at the teacher and administrator level who behave likewise.

My effort has been focused on the younger people—the trainees—who have a much more open mind about things whether related to innovative medicine or ME/CFS. I'm curious to know if you might see a similar pattern in your role. Your bio is so unique to get that perspective. Do you see a light in the tunnel with us being able to educate and is there some way aside from Delaware State where you are—with other institutions around the country—is there some way in which we might be able to advocate for educators understanding about children with this illness at that tender age where they're more likely open-minded?

**Dr. Newton:** Yes, I think there are a couple of things. I publish on the Association of Special Education Teachers website a page of facts about CFS. That is now available to educators across the country. I think that has helped tremendously, because now what happens is, our schools can go and look at that page—that fact sheet—and say, "This is what CFS is."

I think more of that work needs to be done. I think with younger teachers and administrators, if we can train them in what strategies work well with our kids with CFS—for example, Gudrun Lang's work with CFS students doing work serially rather than multi-tasking. In the high school and middle school level, if we have students complete the task or assignment beginning to end rather than in the classroom reading one story, then doing a poem, then vocabulary, the research is pretty clear that it works better for our CFS students—for my son—to do the tasks in order rather than have 15 tasks to do at the same time. The research needs to become more out there with educators and with our teachers.

I really liked the presentation this morning about the parent information centers. If that is the route that the Office of Special Education is going towards, how do we get CFS information out to all 50 state parent information centers? Can we give them fact sheets? What do we do so that they are now an advocate for our children? Because right now, the schools look at us as adversaries. How can we turn that role around? It's not that they're intentionally trying to be adversaries. Like Tina said; like Matt said; they don't have an understanding of the illness. They just simply don't know what it is and they don't know how to teach our kids in the classroom. So what do we do about that?

So I think that yes, there is a light at the end of the tunnel. I see a lot of changes six years into this illness than I did the very first year. There are strategies we can use with our kids so that they can learn things a little bit differently. They are hard to teach because of the processing issues and the short-term memory problems. So

what do we do? Because that does not mean they are stupid. They are smart and we have to figure out how to teach them best.

Recommendations would be making sure that our parents know where they can get help, including the parent information center in each state. Where do parents get that information so they understand what a 504 plan is; they understand what an IEP is and what their children are entitled to in the schools. So they don't just give up. A child said to me earlier this afternoon, "If I hadn't had the help of a parent advocate, I simply would have dropped out of school and gotten my GED." That is just really sad to say that. We need to figure out ways to be more proactive; to be more involved in what's going on so all our kids understand that yes, they have CFS but yes, they can get the education that they deserve in our middle schools and high schools and elementary schools.

**Dr. Marshall:** Are you aware of any evidence or study that's been done or do you think it might be a good idea (that's a hint) to be able to assess these young people. I think the illness has been around long enough and there's now beginning to be a movement—albeit terribly imperfect, listening to the testimonies that we've heard. At least some school districts seem to be enlightened enough to see the value of putting these children in a learning situation. Some of us are old enough to remember when dyslexic children were thought to be stupid and illiterate. Now these are people are honor graduates, leaders of industry, politicians—they're all over the map because schools learned how to accommodate the learning that was necessary for those children.

So do you see that there either has been or might be the possibility of doing a study to show the brightness of these children; that in the right setting, they can achieve at a level that would be comparable to a child in a different setting with the same level of intelligence?

**Dr. Newton:** That's the direction we need to go. We need funding studies in the education field for our CFS students. It currently doesn't exist. There's nothing that's being done on what instructional strategies work best for our CFS students. What curriculum modifications need to be done? What adaptations should we have for our kids? That simply doesn't exist. It's the right time to see if we can put into place funding to do some studies with our students. I think it would yield some very promising results; simple things like assigning homework serially, having a student read all of *Frankenstein* before he/she starts *Tale of Two Cities* or before he/she starts the vocabulary review. We need to study simple instructional strategies that we know already work and see what effect that has on our students with CFS. Would that enable them to do better in their classes and courses?

I think the other thing is, we also need to do research on—there's been some done but not particularly with the student—on processing speed and working memory. I think those types of studies would also be very useful because they would show that the processing speed of some of our students is probably twice as slow. So what that it takes my son maybe twice as long in his computer programming class to write what he needs to do for the programs as a student who does not have CFS? That does not mean that he's stupid. What can we do to help with that processing speed? What strategies are out there that would make it a little bit easier for him to get that information and learn it quicker?

**Dr. Levine:** Have you noticed any difference in Michael's math ability versus his verbal skills? And secondly, this is sort of unrelated, but is there a support group online of his peers? If he can't get to the classroom and hang out with his friends, are there other ways of being social?

**Dr. Newton:** His math skills are very much superior. For him, it's a lot easier. He has a very difficult time—and a lot of CFS students do—retrieving words. When he gets tired, he may not remember the word for truck or the word for start or stop. It's difficult if he's in the middle of an exam with a tutor or teacher who is not familiar with him and he goes past the zone of "I can't remember how to finish the test" even though two days ago or even that morning he knew the material. Math is a lot easier. But you have to be careful, because he may not

remember the simple things, such as the multiplication tables, even though, like I said earlier, he can do more complicated things.

The writing is very, very difficult because our students have to retrieve that information. It's hard for him to get what he wants to say out and on paper. It takes so long and it's very hard. With math it's easy. He can sit and think about the formula and figure out what to do, but with writing, he has to be able to retrieve that information and make the connections. Definitely in his case, math is far easier than writing.

In terms of a support group, I was really lucky in that a group of us moms informally started talking to each other through our physicians and through our school guidance counselor. We started figuring out that there were other people like us who had children who have CFS. The last two years, we've put together a support group of parents in New York, Pennsylvania, Delaware, and Maryland and we get together. When we got together two years ago, it was the first time that my son had ever met another child who has CFS. That was unbelievable. You know that song, "These Are My People?" When he came home, he was singing, "These Are My People" and said, "I finally met somebody like me."

The moms just met two weeks ago. We all get together if one of us is having a particularly difficult time, or something's happened with one of our kids. We meet and have lunch. Our kids can hang out. If our kids are just lying on the floor, they don't have to say to anybody, "Hey, why aren't you getting up and walking outside?" They don't have to explain to each other what's wrong with them. For us, it's a really good support group. We see different physicians in the tri-state area. It's been good to hear and compare what the different physicians are doing.

We are very pro-advocate. Other parents don't have that. Somehow I think we need to create a system where there are advocacy groups for our parents so they have that kind of support. It's been a God send for us and for my family.

**Mr. Krafchick:** You mentioned Gudrun Lang. Has she been testing a lot of children with CFS or just yours?

**Dr. Newton:** She hasn't done either. The study I referred to was an adult study and I mentioned it in terms of seeing if it was applicable to teenagers.

**Mr. Krafchick:** She's one of the few neuropsychologists who know how to test people with CFS. I worked with her and she would be a great person to get involved in this study if one could be funded.

**Dr. Newton:** I would agree. It would be excellent.

**Ms. Holderman:** You mentioned having to be your own advocate and raising awareness. What written materials do you bring with you? Do you get them from certain government agencies or from advocacy organizations? Which materials do you find are helpful to you?

**Dr. Newton:** The CFIDS organization has perhaps the best array of materials that are available to us. That would be first. Secondly would be any of Dr. David Bell's work on CFS and his guidelines. For example, one of the things that our schools have a difficult time with is understanding why socialization is extremely important if your child can only go to school for one hour a day. I have also taken some of the CDC information for providers. But there simply is very little information. CFIDS provides the most that you can use.

The rest of it, I've either had to come up with or produce on my own. It's one of the reasons that I did the special education page, because there was simply nothing out there for our schools and our educators. That is a huge

need. We have to figure out how to get the information to our schools. We need to get that information to the parent information centers. We need to educate everyone on what CFS is and what to do about it.

**Dr. Casillas:** As program director, I have the responsibility of teaching young physicians who will sub-specialize. I find that they get overwhelmed very easily. So Matthew and Christina, I would like to ask both of you if you could help me out in terms of the types of features that you feel would be most important to make sure you express to the physicians that you've encountered so that you can effectively relay the signs and symptoms of ME/CFS without being overwhelming. I think that's one of the key features. A young doctor will come in and say, "My God, there are so many things; I can't believe this really comprises a disease." So if you had to help me out with what I should teach them, could you give me a few pointers?

**Ms Gustavsson:** There are something like 64 symptoms of CFS. It definitely has a wide range of things that are problematic. Fatigue is a big thing for me. I do know another girl for whom fatigue is a problem, but it's pain that's causing her the most problems. When people aren't getting out of bed, there's obviously a problem. I think that's something you should look out for. Also joint pain, neck pain, muscle pain and aches, and what I've described as vein pain, where my veins felt like something was pinching them. What is so weird about CFS is that it has a bunch of random symptoms. When you have someone with symptoms everywhere on her body, that in itself is an indicator of CFS.

**Mr. Lopez-Majano:** I think there's one really key thing that if you don't have it, it's going to make everything else useless, and that's an open mind. There's no diagnostic test for this. So you only have our word. Without an open mind, we're just a bunch of slackers.

**Mr. Krafchick:** I think you also have to have curiosity. That would help too.

**Dr. Marshall:** It's interesting in listening to the two of you. One of the things I teach from first year medical students to senior fellows is this: If a patient walks into your office and says, "Doctor, I'm ill," you either believe them or you don't. They're either lying to you or they're deluded or they're ill. One hundred years ago our knowledge base in medicine was so limited that many times a physician wouldn't know what was going on with a patient, but would then set about to figure it out. "What can I do to help the patient feel better?" Unfortunately, with the advent of the technology of medicine, far too many physicians—and other healthcare providers, by the way; we share the blame—have fallen into the trap that if there's not a diagnostic test, then it must not be real. If there's not an abnormality on a lab or an abnormality on a physical finding that can be put together, it must not be real, yet the patient still says that he or she is ill.

You heard from Dr. Rowe this morning what I think is a mounting idea. When I came up, there was no ME/CFS. There was a condition that was referred to as neurasthenia. Neurasthenia has been around since the time of Hippocrates. The description that was there in the old medical textbook is similar in some ways but not in every way. The fact is that the normal exam which is the harbinger of ME/CFS no longer holds. These individuals are not "normal," although I will admit to you that the older I get, the less I know what the word "normal" means, because normal is what's normal for me. If I am ill, what I want is someone who will 1) believe me; 2) make me the focus of trying to make me feel better or at least 3) help me understand what can I adapt to and where can I go.

The very idea of these children sitting here being given the basic idea that there's nothing that can be done and they have a life sentence of this is absolutely unconscionable to me. I suspect everyone over about the age of 12 has been in a doctor's office. If they have a chronic illness that we know more about and the doctor says you'll have to take this "for the rest of your life"—anybody heard those things? The problem is, number one, that presupposes the doctor knows how long you're going to live. They stole my crystal ball that I got when I got out

of medical school and we don't issue those anymore. I don't know where they get the idea that they know how long we're going to live and number 2, it denies the advances in medical sciences that are being made on a regular basis.

So for the two of you, because of your braveness in just doing this, let me tell you, there's a light at the end of the tunnel. We don't see it yet, but I promise you it's there. And I promise you that you're not going to die old people suffering from this illness like you are right now. I base that statement not on some fluffy "I hope that's going to be the case someday" but on other illnesses that 20, 30, 40 years ago had people who felt not dissimilar to how you feel because they were told that there was nothing that could be done for them. The fact that somebody doesn't have a diagnostic test for you yet—and I emphasize the word yet; we have experts around this table who are biomarker experts—the day is coming. It's not coming fast enough for you. It's not coming not fast enough for any of us who care about patients like you.

But the day is coming, and it's my firm belief that as you sit here and are willing to be brave like this, and others are willing to advocate in a rational, forward-thinking way, the ultimate end result is that people are going to wake up one of these days. Educators are going to learn, clinicians are going to learn, payers are going to learn, the public is going to learn. This is where advocates can make a difference right now—to make sure your educators know, whether you have a child with ME/CFS or not. I promise you, because my children are grown and out of the home doesn't mean that they can't get sick tomorrow. We now have been blessed with a grandson who is eight months old. It doesn't mean he couldn't get it by the time he's ten. Whether that happens or not, it does not release me from my personal responsibility of trying to get the message out to others. I think that's what we're hearing today. The message to educators is, help these children. We need to help the educators understand that you kids aren't stupid. You seem bright to me. It's a matter of finding and unlocking that box for you so you can be what you want to be. I think that's what we want to try to help you all do.

**Mr. Krafchick:** I was wondering in your travails with the schools, was any of the information about CFS held up to counter you, including the old CDC website?

**Dr. Newton:** The old studies that conclude this is a psychiatric illness are a real problem. When Michael first got sick, that's all we heard—this is some type of psychological illness, put him on an anti-depressant. Luckily I didn't hear that from our pediatrician because she had been with us the whole time, that was the first assumption of people who did not know us. That is a real problem. That's why Tina mentioned the problem with the name chronic fatigue syndrome. That is still out there. You have many physicians who still think this is not "a real illness." Somehow we have to dispel that.

I guess one of my questions to this group is, how do we go about dispelling that—the idea that this is not a real illness; that this is a psychiatric disease. It's just laughable when we hear people say things like that—"tell them to get out of bed and go to school." One family member said to me routinely, "Just give him a Coke. The caffeine will be able to get him up and send him to school." What do you do about that? It's constant education and we have to figure out how to educate our physicians, the general public, and our educators that this is an illness; this is something our kids have; this is real and we need to do these things about it.

**Dr. Dimitrakoff:** The reason I applauded Matt earlier is because I applaud the idea of having an open mind. Unfortunately, having an open mind is not an entry exam for medical school. There was, however, a very interesting article in the *New York Times* a couple of months ago describing how the medical school admission tests are actually gravitating toward testing the idea of people who want to become physicians having a more open mind. I want to echo something that Dr. Marshall said earlier. I think if you have young and bright people who go into medicine and you can get them excited about CFS, they can really be a huge asset.

I think one of the major issues that we're facing is, as Dr. Newton was saying, the physicians are not educated about ME/CFS themselves. As Dr. Marshall was saying, in medicine we tend to avoid things we don't understand and shy away from and even become defensive as we are faced with uncertainty or a disease that doesn't have a biomarker or anything definitive. I think part of the solution is something we're already talking about—having those studies that will start with patient participation, then find biomarkers that define the disease, then have specific personalized treatment for those patients who fall into the different subgroups.

I have a question for you. If you had one wish for your physician or person you're seeing, what would be your recommendation and your wish for medical professionals?

**Mr. Lopez-Majano:** What kind of wish? Do you mean a practical one or a genie wish?

**Dr. Dimitrakoff:** Both. Maybe both.

**Mr. Lopez-Majano:** A genie wish would be that he wins five successive lotteries so he can fund these studies, because that's what he would do with the money. The actual wish is...I'm kind of drawing a blank because a) I'm not good at coming up with a lot of new ideas and b) it just seems that it's going to take a much more systemic change than one person, however good they are, can make.

**Ms. Gustavsson:** I completely agree with Matt. It's going to take a lot of people to change how the medical world views CFS.

**Dr. Collins Sharp:** I liked Faith's question earlier and I was going to turn the tables on you to ask what you thought some next steps might be. There have been several examples given—dyslexia, autism, and others—where there has been success in marshalling understanding and advocacy in the school system in particular, since that's our focus for the moment. So I'm wondering, based on your experience both as a parent and an educator, if there are models that you think are ready for us to look at and see what's been successful in the past that could maybe help jump start what the next steps might be.

**Dr. Newton:** Good question. I haven't really thought about it in those terms. We have to look at what is working, such as in the autism and AIDS fields. Those models seem to have worked really well. So maybe we need to look at those models and see how we can duplicate things. It is definitely a question of how we get the information out to our schools and educators and do that in a systematic way so that everyone understands what's going on.

I think that a lot of it is going to have to be done through written material, whether it is printed in our special education textbooks at the college level, whether it's printed in our physician handbooks as we train doctors, or whether it's printed in our textbooks for psychologists and psychiatrists. I think that will have some effect on change.

In the meantime, I also think we have to have advocacy groups. The CFIDS organization, Speak Up About ME—those types of organizational groups will also help get the word out.

Probably the third area we have to work with is the Office of Special Education. How do we get that information into the parent information centers, if that's the vehicle they want to use? How do we have parents understand that CFS belongs in "other health impaired" and that you can qualify for a 504 plan? What do you need to get your child on a 504 plan? What are the difference between that and an IEP? We need to get that information out there.

Right now, many parents who have children who have CFS don't even know what a 504 plan is. They don't even know that their child can qualify for accommodations. They just simply don't have the background or the knowledge. How do we get that information to them so they're not constantly fighting with the school system; so that they don't see it as an adversarial role? How can we turn that role around and become partners with the educational system, working together to get our kids what they need so they can learn best, achieve, get their high school diplomas, graduate, and go to college?

**Dr. Marshall:** I want to thank panel member for stepping up to the plate to help us. I hope this information will be useful to us as we go forth in deliberations making recommendations to the HHS Secretary, particularly related to children with ME/CFS.

**Dr. Newton:** We want to thank you for your time and commitment in doing this. It made a big difference for all of us and for parents who have children with ME/CFS.

## **Agency Updates: CDC, SSA, FDA**

**Ermias Belay, MD, Associate Director for Epidemiologic Science, Division of High-Consequence Pathogens**

### **CDC Activities since November 2011 CFSAC Meeting**

#### CFSAC Webpage Modifications

- Modifications were launched on May 16, 2012 and are based on input from select CFSAC members and patient advocacy groups.
- There's one area that we were not able to review, and that's the provider toolkit. CDC has received input on the toolkit, particularly from Eileen Holderman. It exists in English and Spanish. It will take time to review the toolkit, but we plan to revise it in the next website iteration.
- CDC has printed and distributed hard copies of the toolkit to thousands of providers, state health departments, and advocacy groups.
- Also pending is translation of the revised CDC website into Spanish, which will be done in the future.
- CDC plans to add a section to its website on pediatric CFS. I was very delighted to hear about the pediatric CFS session this morning. The new section is in the works, but it will take us some time. Hopefully the pediatric section will be used to educate educators about pediatric CFS and the challenges and issues that have to be addressed.

#### Continued Distribution of CFS Toolkit and Brochures

- As of May, more than 17,000 copies of the toolkit were distributed to 120 local health departments, CFS organizations, and academic centers. We continue to make those toolkits available primarily as an educational tool for primary care physicians and public health professionals. It's surprising how many public health officials around the country are unaware of CFS. We're trying to change that by providing information through the toolkit.
- As I said, that toolkit is available in both English and Spanish.

#### Education and Outreach

- Medscape Roundtable Spotlight CME/Continuing Education (CE) Course – Drs. Komaroff, Bateman, and Lapp

- You have probably heard about the Medscape Roundtable that was launched in March 2012. The title was Chronic Fatigue Syndrome: The Challenges in Primary Care.
- The roundtable was moderated by Dr. Komaroff. The panel members were Drs. Bateman and Lapp.
- As of May 7, 2012, the roundtable was viewed more than 31,000 times.
- CME credits were given to those who viewed the roundtable and successfully completed a test. More than 4,600 clinicians viewed the roundtable, answered test questions, and qualified for the CMEs. This was within only weeks of the site being launched.
- There is a link for the roundtable on the CDC website.

#### - Continued Meetings with Patient Advocacy Groups

CDC staff members continued to meet with patient advocacy groups. This was started about 10 months ago. Since the last CFSAC meeting, CDC staff members have met with the advocacy groups listed on the slide. We have found having this dialog with patient advocacy groups to be extremely important and we're finding ways to potentially continue this dialog in the future.

#### - Two New Online CME Courses Accredited

##### 1) CFS: Clinical Diagnosis and Management

- Launch anticipated June 20, 2012
- Development team – Drs. J. Jones, N. Klimas, L. Bateman, A. Vincent, C. Lueckte
- Accredited for CME, Continuing Nursing Education (CNE), and CE

##### 2) CFS and Sleep

- Launch anticipated July 8, 2012
- Development team – R. Boneva, B. Natelson, L. Bateman, F. Togo, W. Moore
- Accredited for CME, CNE, and CE

We hope that once they are launched they will make a difference in educating clinicians in the country about ME/CFS and its potential diagnosis and management.

#### - Initiated work with the Center for Advanced Professional Education (CAPE)

- CAPE is a company that develops what's called a standardized patient. CAPE is developing a standardized ME/CFS patient to be made available to medical schools.
- The idea is to start incorporating CFS education in the medical school curriculum.
- CAPE has a lot of experience developing videos that will be available for medical students. The vignettes are being produced now and will be available very soon: I don't have a specific date.

#### Research and Additional Activities

#### - Initiated work on contracts for a multi-site Clinical Assessment of CFS

- CDC is funding seven clinical sites, which are listed on the slide.
- The idea behind this project is to describe the heterogeneity of CFS by looking at patients who are diagnosed and treated at multiple sites.

- Institutional Review Board (IRB) approvals of the protocols have already been finalized. Some of the clinics have already started enrolling patients.
- These patients are diagnosed by physicians independently at the different clinical sites. Physicians will fill out different questionnaires and forms to collect different types of information.
- I do not have time to go through the whole proposal, but by the time it's done, we'll have a lot of information on CFS patients diagnosed and treated at multiple sites.
- That data will be available when it's finalized.

- Update on Metagenomics Collaboration with Blood Systems Research Institute for Pathogen Discovery

- The institute is located in California.
- Metagenomics is a new pathogen discovery advanced research tool that's used by the institute to search for an infectious agent in CFS patients.
- Fifty plasma samples from acute onset CFS patients were shared with the research institute.
- The institute ran 454 sequencing, which is next-generation sequencing for pathogen discovery.
- The initial run on those 50 samples did not identify any specific infectious agent.
- The next step is to use an illumina platform, which is a more advanced, detailed, in-depth sequencing analysis that will be done on those 50 plasma samples.

**Dr. Fletcher:** Why are they focusing on blood plasma?

**Dr. Belay:** Because that was the sample that was available to us. That's a very good point, because that assumes a lot of things. It assumes the agent is in the blood, which may not be the case. It also assumes that it would be in the blood for a long period of time and that's it's in the blood at the time the blood is drawn. So it makes a lot of assumptions. Negative results in the study do not rule out infectious etiology for some of the patients. But they were the samples available to us.

- Publications and Scientific Meetings

- Since the last CFSAC meeting, we have had several publications and attended scientific meetings. They are listed on the slide. The one that is more interesting, I think, is the first one—Experimental Biology 2012 (April), San Diego, CA. Our poster presentation was chosen as a “hot pick” for the press. That poster dealt with decreased basal ganglia activation in CFS subjects. The CDC conducted the study in collaboration with Emory University. It identified on MRIs [magnetic resonance imaging] scans decreased ganglia activation in patients with CFS, which attracted a lot of attention and which was presented to the press.
- Three manuscripts co-authored or authored by CDC researchers have been accepted for publication.

## Committee Discussion

**Ms. Holderman:** The advocacy community is very grateful that the CDC has started to make changes on the website. I haven't gone through all the changes yet, but just the fact that they are making changes is very optimistic. Our review panel is continuing with Dane Cook, Steve Krafchick, Nancy Klimas, and Lily Chu. I had a good meeting with the CDC. We were all at our laptops and we went through the toolkit word-by-word, line-by-line. CDC staff were extremely gracious and attentive and indulgent, really. They gave me the floor. I drew on the whole advocacy population's ideas for this toolkit. Lily Chu also gave written comments and verbal comments via a teleconference. Nancy Klimas has given her endorsement to Lily's written comments. Steve and Dane may be providing some comments.

Finally, I'd like to say that Dr. Unger and Ermias and John O'Connor with the CDC really have allowed us to keep this process open until we get a site that really reflects what this disease is. I ended it by sending Dr. Unger and Dr. Belay a five-minute video from an advocate named Giles Meehan from the U.K. made with a group of international advocates. It was a very effective video about CFS; it's on YouTube. Dr. Unger watched it, thanked me for sending it, and said that they can never be reminded enough from patients what the disease is. So, do you have a date for toolkit revisions?

**Dr. Belay:** We don't have a date for the toolkit, and thank you for your nice comments, by the way. We received inputs from you and also from Dr. Lily. We'll be incorporating them in our revision of the toolkit, but it will take us some time. I don't have a specific date for you.

**Dr. Levine:** What particular aspects of the toolkit are you most concerned about revising?

**Ms. Holderman:** The whole toolkit.

**Dr. Belay:** Mostly it's the language and tone.

**Ms. Holderman:** We focused on three things like we did in the last review—tone, language, and content. In the newest revisions, we see the biggest changes in tone and language. Which is huge. How you say something and the words you choose is huge. Of course, content is even more important. So it's really a combination of all three of those. The toolkit has not been changed in a couple of years. I think Dr. Unger said that it wouldn't be realistic to think that it would be changed this year. We're looking at next year, but I was wondering—next year, January or next year, December?

**Dr. Belay:** I don't know when next year. By the way, I have a hard copy of the toolkit for all of you. It's also available on the CDC website.

**Dr. Cook:** Is there any openness from the CDC to perhaps adopting the primer from IACFS/ME? It's going to take you that long to modify a toolkit that is admittedly very superficial, I'm not sure how helpful it would be to a provider based on its current form. I'm not entirely sure that word-smithing is the most efficient and best way to go about addressing the CDC website.

The IACFS/ME primer has its own biases as well, but it's much more comprehensive. It has a lot more information than the CDC toolkit. It would be easy to adopt if the CDC is open to it and if there can be some qualifying statements by the CDC saying, "We don't necessarily endorse every one of these comments." It was a collaborative community of experts in CFS that came together and came up with, I think, a very well thought out primer for practitioners. I'm wondering if the CDC might be open to that.

**Dr. Belay:** I haven't read it in its totality, I have to admit, but we should consider it.

**Mr. Krafchick:** I know a lot of work went into the toolkit and I just looked at it for the first time last week. If I was a primary care provider and I was reading this, the thing that would hit me most was cognitive behavioral therapy and the emotional aspects of it. I don't know that those are appropriate messages for a primary care physician not knowing about CFS and learning about it. Teaching somebody to get by with their problems, which is all that cognitive behavioral therapy could ever help somebody do, is not necessarily a bad thing, but it's got a full page emphasis here in two pages of a few pages. Graded exercise therapy needs a little work, but it's a good idea. I'm just concerned—you said 17,000 of these went out? Did I get that right?

**Dr. Belay:** It introduces CFS to a lot of people who did not know about CFS or what CFS is. We have received a lot of positive feedback because people have no idea what CFS looks like—no information at all. So, it has some positives. But if you have any concerns, any issues, please give us feedback.

**Mr. Krafchick:** You just heard them.

**Dr. Belay:** Written feedback.

**Mr. Krafchick:** The concern is, I read the primer. This really will help a primary care physician looking at CFS. When I read the toolkit, it concerns me that it gives the wrong message. I know a lot of work went into it. It's my view when I read it cold and the primer cold, both within a short period of time. If I'm a physician who wants to figure out, first, what my patient has and then what I can do for it, the primer has a lot more meat to it. The treatment in here (the toolkit), I would take out. The explanations of CFS and the problems—that's done OK. This [primer] is done far superior.

**Dr. Lee:** I know that people at the CDC have been part of the XMRV team that's going from Columbia University with Dr. Lipkin. Do you have any further updates on that? I know we heard briefly from Dr. Koh today.

**Dr. Belay:** That study has been finalized, but the results are not available to me, so I can't tell you the details. It will be published in some form within several weeks, is what I've been told. I do not have access to the results because the data are not available at CDC, they're available at Columbia. All the participating scientists signed a nondisclosure agreement not to independently disclose the data.

**Dr. Marshall:** The publication coming out within the next couple of weeks will be a white paper. That's what I understand.

**Dr. Belay:** I think so. Eventually it will be published for peer review. I don't have any additional information.

## **Social Security Administration**

### ***Amanda Wulf, Acting Deputy Director, Office of Medical Listings Improvement***

- Our office is in charge of defining a policy for the medical listings that we use to evaluate disability claims under Title II and Title XVI of the Social Security Act.
- My presentation is very short today because what we would like to do is provide a more detailed update at an upcoming meeting. This will be partially for the benefit of the new members to have a true overview of the social security disability process and how we evaluate cases involving CFS and to provide you with some updated data—current data about current claims involving CFS.
- Today I just want to remind you that at the November 2011 CFSAC meeting we provided some data to the committee. If anyone is interested in that, it is available on the website.
- In addition to that, our agency guidance on CFS in a social security ruling is on the SSA website. If you do a keyword search for chronic fatigue syndrome you can find that. It explains our disability evaluation process, how we evaluate CFS, and documentation involved, which is especially helpful for disability claims.
- We look forward to providing a more comprehensive explanation on the social security disability process and our evaluation of CFS claims.

## Committee Discussion

**Dr. Lee:** If we don't already have a good link to that part of your website with the CFS explanation, we can put that on CFSAC.

**Mr. Krafchick:** Has the social security regulation 99-2p been revised recently or is that the one on the website?

**Ms. Wulf:** That's the one I'm speaking of. It has not been revised recently.

**Mr. Krafchick:** Does it need to be?

**Ms. Wulf:** We always re-evaluate and refresh our guidance. We certainly can, especially if there are any updates in the medical community, especially in our analysis of the definition of CFS, how we evaluate it, and what types of medical evidence we need. As the medical community changes or advances, we update our policy.

**Mr. Krafchick:** That regulation is pretty good for people with CFS, currently. So if you're going to change it, don't mess it up.

**Ms. Wulf:** If it's not broken, we won't fix it. We always like to know what is happening in the medical community. We want to stay up to date with our policy and procedures, so thank you. I appreciate the vote of confidence.

## Food and Drug Administration

**Theresa Michelle, M.D., *Medical Officer Team Leader, Center for Drug Evaluation and Research***

- First and foremost, I'm delighted to introduce to all of you Dr. Keith Hall who will be serving as the FDA alternate *ex officio* CFSAC member. Dr. Hall is a practicing rheumatologist and senior reviewer in our division at FDA. He holds an M.D. from Boston University and a Ph.D. in pharmacology from the Massachusetts College of Pharmacy. Prior to coming to FDA nine years ago, Dr. Hall was a researcher at NIH where he developed particular expertise in rare autoimmune fever syndromes. Dr. Hall, would you please stand up and be recognized?
- We are continuing to develop expertise in ME/CFS among reviewers in the Division of Pulmonary, Allergy, and Rheumatology Products, where all applications in this field now reside. Over the last six months this has included:
  - A presentation by an outside expert, Dr. Suzanne Vernon, on the science behind CFS at our monthly Scientific Research Round
  - Distribution of the CDC's CFS toolkit
  - An ongoing effort to keep division reviewers updated with key research articles as they become available, such as the "Minimal Data Elements for Clinical Trials," which came out of this committee.
- At the November 2011 CFSAC meeting, I was asked to report on the number of applications for CFS that we have active at the agency. We currently have eight active INDs, or investigational new drug applications for CFS. An IND is an application to allow clinical studies of investigational products to proceed in humans. In general, commercial INDs are sponsored by companies that want to develop drug products for marketing, whereas research INDs are sponsored by individual investigators or groups of investigators who are looking to conduct clinical trials with a product not approved for that use.

- Finally, I would like to acknowledge the many emails we have received over the past several months by individuals requesting a “stakeholders’ meeting” to address unmet health needs of patients with ME/CFS. I’d like to assure you that the FDA Office of Special Health Issues is currently in active dialog with leaders of this letter-writing campaign to try to identify what specific goals such a meeting might entail so that if a meeting is held, it could be as productive as possible.

## **Committee Discussion**

**Dr. Marshall:** Are you able to share anything about the nature of these INDs? We learned about one of them earlier today from industry.

**Dr. Michele:** If the holders of those INDs wish to step forward and tell you about them, they can do so. You don’t want to know what I went through to get permission to tell you what I did.

**Ms. Holderman:** I don’t know too much about the letter writing campaign but I know a little bit about it. You sounded very open to meeting with the advocates. Do you have an idea in your mind what you’re looking for and has that been conveyed to the advocates?

**Dr. Michele:** First off let me say that FDA recognizes that this is a horrible, awful disease. We hear you. No one could sit through the testimony that we have heard today and at other meetings and not be moved. Believe me, we’re all there. We’re physicians. We want to help people. The difficulty that we have is that we need to make sure that whatever we’re talking about is something that can be goal-directed.

We’re not permitted under the law to discuss applications with anyone other than the sponsor of those applications, except during specific circumstances such as if we have an active application in-house that can go to one of our advisory committee meetings. Then the data become public. Otherwise, we advise you to go to the direct sponsor to get the information from them.

We are very open to having a stakeholders meeting. We just need to understand what the goals of that meeting would be and make sure that it’s something that we can do that’s not outside the purview of our agency or would be better served by, say, an NIH committee or this CFSAC group.

**Dr. Marshall:** It sounds like something you said was a bit of a conundrum. You had to go through hoops to tell us the number of INDs, but can’t tell us anything about them. We need to go to the sponsors to get more information. How will we know who the sponsors are?

**Dr. Michele:** Indeed. If there are sponsors out there, usually those drug companies are very vocal. And you know they’re out there. Certainly we’ve heard from people today. Clinical trials are all on Clinicaltrials.gov, so if you look up clinical trials for CFS, anything that is a drug trial has to be on that website by law. You can go through that route to get some additional information about the clinical trials.

## **Break**

## **Public Comment**

A summary of public testimony appears at the end of this document.

## Committee Discussion and Plans for Day 2

**Dr. Marshall:** Let me take the chair's prerogative and start the discussion with something that has been mentioned several times this afternoon, and that's the new primer for clinical practitioners. How many on the committee have been able to see this? For the few people who might not know this, it's just been recently released. It's not something that has been around long. How many people have had a chance to read it? Somehow I'm not surprised to see all those hands.

I'd like to thank Nancy Lee for making the decision to actually put this in so those who have not seen it can take a look at it. For those who have read it, how about some brief comments? What do you see as the strengths? Do you see any particular shortcomings in it, any challenges with it, recognizing that—and I talked to Lenny when they were close to publishing this, I saw an early copy of it—the authors do not hold this out as the final discourse. They hold this out as the latest chapter in the dialog and progress in helping clinicians to understand how to better care for ME/CFS.

**Dr. Levine:** I think, obviously, it's very well put together. It covers the complexity of the illness, but it's succinct enough so people won't be put off by an enormously didactic type of document. I think it offers some good solutions in terms of listing medications that offer symptomatic relief in many patients. I think, actually, one of the most useful things is in the back where you have a worksheet. I'm now involved in several clinical studies where I find these worksheets helpful in terms of checking off what clinical symptoms are relevant and whether the patient meets the Fukuda criteria, the Canadian criteria. The pediatric worksheet is very helpful. Overall, I think it's quite good. It's a starting document and it could use some refinements, but I think it's good.

**Dr. Cook:** I think the openness to the evolution of the document is a strength of it. They're very upfront. I think for the most part it's quite balanced. It is, with a few exceptions, very careful in its approach to the pathophysiology and treatments. I think that's a strength of the document, again, with a few exceptions.

**Dr. Fletcher:** I was a little bit disappointed because there are people around the world who have been working for several years on biomarkers for chronic fatigue and there's not a single one here. In their tests to be considered depending on symptoms, there's only immunoglobulins, which really won't help you at all. There's morning cholesterol; the rheumatoid factor should be done to eliminate another disease. On Table 1 we find a marker for inflammation—C reactive protein—which is probably the most non-specific analyte that can be looked at and is elevated in almost everybody. So I just hope at some time or other a working group will begin to include some of the things we have shown to be objectively different in chronic fatigue compared to healthy controls.

**Dr. Marshall:** To respond to you on behalf of Dr. Jason, I asked that very question of him when I saw the early draft. His basic response was that the consensus among the group is that those biomarkers are research tools and this is a tool that they're trying to use for clinicians to bring them up to speed. The primer writers did not, intentionally at least, eliminate the work that's been done. Those tests are not easily available. Ask the clinicians around the table how easy it is to get a serum IL-5 level or a serum neuropeptide Y level. You can't get those clinically.

**Dr. Fletcher:** You can at my lab.

**Dr. Marshall:** Of course. Postage paid, or postage due? I'm just checking. We got you on camera here, so be careful. I agree with you, CRP is not my favorite biomarker either, but it is one that has extensive use and application in clinical inflammatory diseases. That was the primer developers' intent and I think part of the

refinement will be to give them that feedback. I use the old argument there are a lot of tests. There was a time—I think you and I are senior enough to remember—when C reactive protein was really still a research test. What they had were the old wintrobe sedimentation rates that they used for inflammation. Now high-profile, high-sensitivity CRPs can be done for various diseases.

I think it was the primer developers' intent to use clinically available tests for the clinicians—and I guess this sounds like I'm being disdainful towards them and I'm certainly not and I did not take it that way when it was told to me—not to confuse the issue with research information that couldn't be ordered. Just for the non-clinicians, there are a lot of illnesses now where gene mutations are actually defined biomarkers, but there are only certain institutions where you can get them done because many commercial labs don't do them. So if you don't know, Mary Ann, the chance of getting neuropeptide Y level done on these people is less because you have to find somebody who could run it and then you have to know that they know how to run it. No one would question that Dr. Fletcher's lab knows how to run it. All kidding aside, I think that she can only accept so many pro bono samples to be run.

**Dr. Fletcher:** You mentioned gene expression. I really have my hopes bound up in that. I think that's a real possibility.

**Dr. Marshall:** I think many of us do. We just have to bring the clinical pathologists along. They have a pediatric geneticist who screens all the gene expression and gene mutation study requests for our entire campus because we work on a state campus where less than half the patients have any money for reimbursement. The hospital pays for these things and they're \$1,000-\$3,000 a pop. So part of this is just the logistics. The way I interpreted listening to what Lenny told me was that the intent here was to show what clinicians right now would be able to do if they wanted to evaluate and not exclude anybody.

**Dr. Dimitrakoff:** Just to jump in on the discussion on gene expression—we don't want to probably turn it into a discussion entirely about that—but what I think you meant is that there are already tests that look at genetic variations, most probably variations like single-nucleotide polymorphisms. I think there is one that is clinically reimbursable for monitoring warfarin levels. It really is the future in looking at diseases like CFS. Part of the problem lies in the fact that the prices are going down, but we still don't have information enough about what's normal and what's not normal.

Here is a suggestion. I actually knew a geneticist once who had this idea about how to define the normal and the abnormal. He had this interesting idea about anyone walking into a hospital spitting into a cup. You get the DNA from the saliva, you can save it somewhere, and you can create a huge data bank. I think we're getting to a point that we have a lot of samples from people with CFS/ME that are very well-characterized, but then we'll end up in a situation where we're going to need to know what is the normal; what is the abnormal. I think we need to think ahead and prepare for that time.

**Dr. Marshall:** By the way, one of the audience members pointed out to me that when I talk too fast, I say "CSF" and not "CFS." CSF is cerebral spinal fluid and CFS is chronic fatigue syndrome. That's another reason I'll be glad when they get rid of that name. I can't pronounce it. Steve what do you think?

**Mr. Krafchick:** I think you should put an "ME" in front of it and you'll be fine.

**Dr. Marshall:** I'd still butcher it; it doesn't really matter.

**Mr. Krafchick:** I think the primer is really helpful to somebody who knows nothing about ME/CFS. It gives the worksheets, it talks about lab tests, and most importantly, it gives a differential diagnosis and discusses the other

things you should think about that cause fatigue. As an attorney who has done medical malpractice cases, if somebody doesn't follow this, they've screwed up and they are potentially exposed. I just think it's a good start and it's a document that's going to be evolutionary.

We talked to Ermias after I kind of pilloried him up there—I'm sorry about that—but in reality, why invent a toolkit when you've got a primer? Why not connect to the primer if the IACFS/ME would let you do that and put up information that's very current and very useful? They also talk about precipitating factors, in which they include physical trauma. I didn't notice that.

**Dr. Marshall:** This comes close to what many disciplines identify as practice parameters for existing illnesses. The issue, though, is that those are usually put out by a professional clinical organization and as of yet, we don't have a clinical organization for ME/CFS.

**Mr. Krafchick:** That's because it didn't grow up in any particular—it started in the infectious disease community.

**Dr. Marshall:** Then it went to the immunology community.

**Mr. Krafchick:** Then it got lost. Whereas if you look at the history of something like fibromyalgia, it grew up and stayed in the rheumatology community, the criteria were designed by a group of rheumatologists that got together and said, "We have to study this. In order to study this, we have to agree on what it is." So they came up with criteria.

**Dr. Marshall:** That's an interesting point for this committee to discuss. Is this a primary care or a specialty disease? I've been on this committee now a little more than two years. I went back to look at the old records and I can't remember us ever as a committee inviting anyone from the American Academy of Family Practice, the American College of Physicians, the American Academy of Pediatrics, and I would put in the American College of Obstetricians and Gynecologists—the primary care specialists. And they do recognize themselves as primary care specialists for women. I don't think we've ever invited anyone there—the president of the organizations—and said, let us tell you about this; let us teach you about this.

In my view, having read it now, this primer ought to be sent out to the presidents of all those individual organizations for dissemination to their entire membership. Because you simply cannot believe that there are not people walking into these docs' offices with these complaints. The doctors don't know what to do, so they either call the patients crazy or they throw them out. I don't agree—maybe it's because I'm protecting my own profession—but I don't agree that they're doing it because they're bad doctors or because they don't care. I think they're doing it primarily because they don't know what to do and they don't know how to deal with it and unfortunately in medical education, we don't do a good job sometimes in teaching doctors that it's OK to say, "I don't know."

**Mr. Krafchick:** There are two things that are driving it. One, when somebody comes in with CFS, it's not a five or ten minute doctor visit. And two, there's a lot of ignorance about what I can do as a primary doctor to help the patients. Those two conditions make these people really hard to deal with. A lot of doctors as a result of that will just say, "I'm not going to touch that."

**Dr. Vincent:** I haven't read the primer, but I think it's a great start. I was thinking about me sitting in the clinic trying to go through page 12 in one setting. I wouldn't be able to do that. It would need the coordinated efforts of sub-specialists to help me with several of those spots. I don't think primary care physicians are familiar with neurally-mediated hypertension and the definition of POTS. They may want to start with the fact that sleep is unrefreshing. This is a great start but it really needs to be simplified so that primary care providers can use this.

**Dr. Levine:** I wasn't going to bring this up until you raised the issue. I think it's an important issue to raise—who ultimately takes responsibility for taking care of chronic fatigue patients? I still consider myself a CFS specialist and I want the patient to also have a primary care doctor, especially as the population ages. I want to make sure they get their colonoscopies, their gyn care, cholesterol, etc. I don't want to have to worry that some of these symptoms of fatigue are masking a silent MI (myocardial infarction) or the onset of insulin resistance. I think the primer is good for all internists, whether they're primary care physicians or specialists. But it would be good at some other point to have a discussion about the arsenal of doctors that somebody with CFS should have. Should the primary care doctor assume responsibility for CFS care? What if there isn't a CFS specialist in that person's state or city? That would be something for discussion, I think.

**Dr. Marshall:** As I said earlier today, I have people calling with some regularity. I have tried to get patients into clinics even of my colleagues. I can get people into family medicine clinics in July and August when the kids have just finished their residencies and I don't have anybody in clinic yet. And there's nothing wrong with that. Half these kids I've trained myself or had a hand in training. The others I know to be quality young people and quality physicians. The problem is that in many cases, for exactly what you just said, it needs some of that experience to see the nuances.

Let's face it; ME/CFS is still a diagnosis of exclusion. You've got to make sure that the patient doesn't have any of these other illnesses that may present similarly. If there's a definitive therapy, you can help the patient get better a whole lot quicker than what we have as a general armamentarium. You don't want to leave something that's very serious, like some of the ones you mentioned, untreated because there's a morbidity and a mortality associated with that. Some of these kids are not very experienced in doing that and as we've been reviewing today, there are very few university-based ME/CFS clinics. I think that's probably one of the major areas that we should start pushing for—a university-based clinic.

As backwards as we are at the University of Mississippi, that discussion is ongoing right now. There are several clinicians who have expressed interest in the illness. I won't do things that I can't do well because it drives me crazy. I know how much time it takes to take care of these patients correctly and I simply don't have that time. I'm headed from here to Europe tomorrow and I haven't been home in a week. That sort of thing happens periodically. You can't take care of somebody with ME/CFS over the phone. You've got to be there for them. And I'm preaching to your choir. You two know this better than probably anybody around the table. There are doctors who would find this most fulfilling; most useful. And we're trying to set the model for other institutions that might be willing to do it as well.

The question is, how are we going to support them? It's not like it was in the old days for university doctors when the state paid all of the salary. The state actually pays a small percentage of the salary. We have to make our living just like everyone else, through research funds or clinical dollars. And when you take an hour with a patient, there's something called a relative value unit (RVU). You don't get many RVUs for that, and you don't get much money for it. So part of it is funding and I argue that if there's anything that some of our agencies could help fund, it would be something in an education mode where we're teaching young doctors how to take care of CFS patients.

**Ms. Perry:** I want to raise an issue that CFSAC has discussed in the past. Some of the new members won't be familiar with this, but hopefully some of the rest of you might remember our discussions where we talked about some of the virtual learning models that have been out there. We talked about the Project Echo model. It fits into the discussion of whether this is a specialty disease or a primary care disease and whether you can expect the average primary care doctor to be able to handle what's in the primer. Under the Project Echo model, there were academic experts in an academic medical center who then connect out.

The initial Project Echo model was with hepatitis C. A single doctor in a rural community—a PCP [primary care provider]— would be trained to become the community resource, the community expert on hep C. The doctor would work with the academic medical center via videoconferencing to present cases, get trained, and become a resource to the community. The other PCPs in that community would have someone to whom they could refer as a local expert. You don't need to have every PCP in the country having this level of knowledge, but maybe you could train some so that others could have geographical access.

**Dr. Lee:** Is that what you're going to talk about tomorrow, Beth?

**Dr. Collins Sharp:** Yes, I'll use that as an example.

**Dr. Lee:** We're going to discuss in the funding session tomorrow how something like that might be possible. It's not something that the federal government originates. An application is made and applied to the federal government.

**Dr. Fletcher:** I just wanted to say, lest people think I didn't like the primer, I'm really impressed. I know at least three of these people are really excellent primary care physicians. Those people are Roz Vallings—I visited her in New Zealand and she's just idolized there for her work in ME; Cindy Bateman in Salt Lake City has a splendid clinic and she's a general internist; Chuck Lapp is a primary care doctor. I think that from their perspective, they bring a great deal of expertise.

**Dr. Marshall:** I think some of us are senior enough to remember when somebody who went into internal medicine was considered a high specialist and now their generalists—they're primary care doctors. In the old days, doctors would come out of medical school, do a rotating internship, and go into practice. That was the average physician. If they did a residency, that was very much a specialist. There was no such thing as a sub-specialty unless they happened to get interested in something. It raises an interesting question. If we decided that we wanted to go to ACP, AAFM, and ACOG, would we want to go to the American College of Allergy, would we want to go to the American College of Rheumatology, and how would we get the people involved?

I would say at the very least the clinicians who are involved in immunology should know the primer, whether they're rheumatologists, allergists, or immunologists. I would say endocrinologists probably should know about this in great detail because as Susan and Ann pointed out, the primary care physician can't take an hour to go through things she or he can't answer in their office anyway because they don't have the equipment or the setup to be able to do that. In terms of managing the illness, it still makes sense that it would be a primary care illness managed by trained and understanding primary care providers—not just compassionate but understanding of the underlying illness.

**Ms. Holderman:** I did a quick read on the primer and I like what I see so far. I know that the authors of the primer have a concern that I do. I'll mention it. This won't be the forum to fully explore it. It's a great document but it exists in a vacuum unless we figure out, like you said, how to disseminate it and distribute it. Maybe CFSAC can have that discussion at some point. What can we do as a committee? Can we endorse it; ask for funding to distribute it to PCPs and specialists? Would that come in the form of a recommendation or do we get it on the agenda?

**Dr. Lee:** I think that you all can make recommendations like that, but one thing you probably need to look into beforehand are issues around copyright and who owns this. The government has to be very careful about that.

**Dr. Marshall:** I raised that with Lenny when he first started talking about this.

**Ms. Bond:** We did receive permission to duplicate the copies that you have now but not to widely distribute it or start making copies of the copies. I even talked to Dr. Freeberg and let him know, and Lenny. So I would also say we should be cautious about making copies for anyone else from these copies that the committee has.

**Dr. Marshall:** This is the intellectual property of those who have done the work. Those of us who do this sort of stuff respect it. I have no sense that they want to be restrictive or that they want to make a million dollars apiece off of this. I have never gotten that sense, but they're working through how they want to do this. I would argue that endorsing it—and I will tell you why I'm telling you this now in just a second—endorsing it is something realistic that this committee could do. Commending it to the Secretary for her office to determine if there is a way for it to be used in the context is a very real thing that we could do. We can have a conversation with Dr. Freeberg and the rest of the individuals about copyright issues—do they want to license this? What do they want to do before we say we want to get funds to distribute it because, candidly, the right way to do this it seems to me in today's world is through an online version—hit the send button. You can send it to a million people like that.

For older people who want to print it, they can print it. For most of the people who will either download it to their desktop or their iPad, or if they've really got good eyes, their iPhone, they can use it in the office setting. I'm not sure it's made it to the point where they'll flip over and use it, but it certainly will set their thinking when they begin to see the individuals. That is what this document would move forward tremendously.

**Dr. Fletcher:** The copyright is by the organization.

**Dr. Marshall:** We'll have to figure out who can speak for that organization in an official capacity.

**Mr. Krafchick:** What I'd like to do is back up Eileen and make a motion that we endorse this document and urge the Secretary to look at ways that we can make it available to the primary care providers in the country.

**Dr. Marshall:** Do we hear a second to that motion?

**Dr. Fletcher:** Second.

**Dr. Marshall:** I would like to offer a friendly amendment to be more specific to her about what providers and the means to do that. Again, the argument is, send it to the primary care providers. We don't provide any targets for them in the language like some of the other recommendations do because they're not specific enough.

**Mr. Krafchick:** How would you like to make it specific?

**Dr. Marshall:** I would say to the presidents of the major primary care organizations in this country, and then we can smith what we mean by which ones, but there are only about half a dozen of them.

**Mr. Krafchick:** I guess I'm thinking bigger than that. I would think that we look at ways to make it available to the primary care community that is going to see these patients, at least at the gates, because it gives them things to think about. If they don't do it all, at least you've got a differential diagnosis of all these different conditions. Physicians can go, "Oh, my God, I've got to refer this to somebody else," and they'll find somebody.

**Dr. Marshall:** You and I are saying the same thing, and the mechanism that I'm having is that we would ask the president of the American College of Physicians to send the primer electronically to everybody on the ACP list,

because electronically, it doesn't cost a thing. Ninety-three percent of board certified internists in the United States are members of the American College of Physicians.

**Mr. Krafchick:** I would accept that as a friendly amendment as a vehicle distribution, but we still have to get permission from the IACFS/ME.

**Dr. Marshall:** Without question. To me, that is implicit in the motion you made because you're asking the Secretary to explore ways to get it done. Does everybody understand that, with the accepted secondary friendly amendment?

**Dr. Cook:** I reviewed it and I'm in favor of that, but can I ask that everybody please review it before everybody starts nodding their heads and saying this is something we endorse? Can we just take a couple of steps backwards before we vote on the motion?

**Dr. Marshall:** I read it and reviewed it, so I'm good with that.

**Mr. Krafchick:** If there's a concern about that, we could table it and take it up first thing tomorrow.

**Dr. Cook:** There should be a concern about that. Everybody should read it before they start nodding their heads and agreeing.

**Dr. Lee:** We have a couple of hours tomorrow afternoon.

**Dr. Marshall:** We do have a couple of hours. I think that's good council, so with your permission we'll table that motion or we can withdraw it and you can remake it tomorrow.

**Mr. Krafchick:** Table it until tomorrow.

**Dr. Marshall:** Fine. We'll table it until tomorrow. We have a couple of minutes left. Let me give you a little taste of what's going to go on tomorrow. First of all, unfortunately, I won't be leading the discussion. I have a long-standing commitment for a meeting in Switzerland and the plane leaves at 8:30 tomorrow morning from Mississippi. I'm flying back tonight so that I can leave again tomorrow. Originally it wasn't going to be a problem, but the dates got shifted around a bit. Nancy will run the meeting tomorrow and things will be just fine.

Tomorrow is going to be about two things:

- We're going to get more agency updates and discussions about funding opportunities and other support opportunities.
- In the afternoon will be a very interesting presentation by several of the ME/CFS organizations. Their presentations are in your packet. You can take a look at that.

And then the discussion tomorrow afternoon is going to be on two things that I hope you get accomplished:

- One is an even better recommendation to the Secretary about the definition of CFS. With all due respect to my colleague Dr. Belay, I don't think we have to be beholden to the CDC, but I think we have to be mindful of it. They are the organization charged with clinical epidemiology. How can we construct a win-win situation where the patients are properly served and we can suggest specific changes in case new clinicians get interested in CFS and refer to the toolkit before they can see the primer?

- The second is a review of anything we want to talk about in terms of moving a recommendation forward to the Secretary regarding pediatric ME/CFS. I think one can argue that clinical care is clinical care whether they're kids or adults. But there is this unique idea about educational opportunities, the barriers that these children face, and the protections that are already built in for them. I argue that most parents and probably most smaller school districts don't know much about this and if the school district knows about it, they may not be likely to share that information openly because it's expensive in their mindset.

We can make a recommendation or recommendations to the Secretary—depending on what we finally come up with—as to how we can improve that process, what roles other agencies can take, what role HHS itself can play so that these kids who have this illness can exercise their rights as citizens to access the services that are available to them as children with chronic disabilities, just like many other people with diseases that are much better recognized.

If we get those two things done and the consensus of the group is still that it's a good idea to endorse this primer and send it forth to Secretary Sebelius looking for ways to disseminate it to the broader market of primary care doctors, that will be an extraordinarily productive two-day meeting that we've had. So with that, the big hand's on the 12; we're done. Thanks everybody for being here and we'll see you tomorrow.

## **Adjournment**