CHRONIC FATIGUE SYNDROME ADVISORY COMMITTEE

Meeting

Tuesday, October 28, 2008
9:00 a.m. to 5:30 p.m.

Wednesday, October 29, 2008
9:00 a.m. to 3:00 p.m.

Room 800, Hubert H. Humphrey Building
200 Independence Avenue, SW
Washington, DC 20201

Agenda Tuesday, October 28, 2008

9:00 a.m.	**Call to Order** **Opening Remarks**	Pg 6	Dr. James Oleske *Chair, CFSAC*
	Roll Call, Housekeeping	Pg 6	Dr. Anand Parekh *Designated Federal Official*
9:15 a.m.	**Centers for Disease Control and Prevention Update**	Pg 8	*Ex-Officio*, CDC
10:00 a.m.	**National Institutes of Health Update**	Pg14	*Ex Officio*, NIH
11:00 a.m.	**NIH Grantee Speaker**	Pg 19	Dr. James Baraniuk *Georgetown University*
12:00 p.m.	**Subcommittee Lunch**	Pg 24	Subcommittee Members
1:00 p.m.	**Subcommittee Updates (30 minutes each)**	Pg 24	Subcommittee Chairs and Committee Members
	1. Education **2. Research** **3. Quality of Life**	Pg 24 Pg 25 Pg 27	
2:30 p.m.	**CFS Adolescent Roundtable**	Pg 29	Dr. Kathy Rowe, *Australia*; Barbara Comerford, *New Jersey*
4:30 p.m.	**Public Comments**	Pg 48	Public
5:30 p.m.	**Adjournment**	Pg 72	

Agenda Wednesday, October 29, 2008

9:00 a.m.	**Call to Order** **Opening Remarks**	Pg 73	Dr. James Oleske *Chair, CFSAC*
	Roll Call, Housekeeping	Pg 73	Dr. Anand Parekh *Designated Federal Official*
9:15 a.m.	**Health Resources and Services Administration, Food & Drug Administration, and Social Security Administration Updates**	Pg 73	*Ex-Officio*, HRSA, FDA, and SSA
10:00 a.m.	**CFS and Medical School Education**	Pg 81	M. Brownell Anderson, *Association of American Medical Colleges*; Dr. Leonard Jason, *CFSAC*
11:00 a.m.	**CFS Provider Education**	Pg 88	Kim McCleary, *CFIDS Association of America*
11:15 a.m.	**Public Comments**	Pg 93	Public
12:00 p.m.	**Subcommittee Lunch**	Pg 106	Subcommittee Members
1:00 p.m.	**Committee Discussion**	Pg 107	Committee Members
3:00 p.m.	**Adjournment**	Pg 115	

CHRONIC FATIGUE SYNDROME ADVISORY COMMITTEE

Voting Members

Chair

James M. Oleske, MD, MPH, CIP Newark, NJ	Term: 01/03/06 to 01/03/09
Rebecca Artman Middleburg, FL	Term: 01/03/06 to 01/03/09
Lucinda Bateman, MD, PC Salt Lake City, UT	Term: 01/03/06 to 01/03/09
Ronald Glaser, PhD Columbus, OH	Term: 04/01/07 to 04/01/11
Arthur J. Hartz, MD, PhD Iowa City, IA	Term: 04/01/07 to 04/01/11
Kristine Healy, MPH, PA-C Chicago, IL	Term: 01/03/06 to 01/03/09
Leonard Jason, PhD Chicago, IL	Term: 04/01/07 to 04/01/11
Nancy Klimas, MD Miami, FL	Term: 04/01/07 to 04/01/11
Jason Newfield, Esq. Garden City, NJ	Term: 07/01/06 to 07/01/09
Morris Papernik, MD Chicago, IL	Term: 01/03/06 to 01/03/09
Christopher Snell, PhD Stockton, CA	Term: 04/01/07 to 04/01/11

Ex Officio Members

Centers for Disease Control and Prevention (CDC)

J. Michael Miller, PhD *(Primary)*
Associate Director for Science
National Center for Zoonotic, Vector-borne, and Enteric Diseases

Ermias Belay, MD (*Alternate)*
Associate Director for Epidemiologic Science; Division of Viral and Rickettsial Diseases; National Center for Zoonotic, Vector-borne, and Enteric Diseases

Food and Drug Administration (FDA)

Marc W. Cavaille-Coll, MD, PhD
Medical Officer Team Leader
Division of Special Pathogens and Immunologic Drug Products

Health Resources and Services Administration (HRSA)

Deborah Willis-Fillinger, MD *(Primary)*
Senior Medical Advisor
Office of the Administrator
Center for Quality

National Institutes of Health (NIH)

Eleanor Hanna, PhD
Associate Director for Special Projects and Centers
Office of Research on Women's Health (ORWH)

Social Security Administration (SSA)

Laurence Desi, Sr., MD, MPH *(Primary)*
Medical Officer
Office of Medical Policy

James Julian, Esq. *(Alternate)*
Director
Office of Medical Policy

Executive Secretary *(Designated Federal Official)*

Anand K. Parekh, MD, MPH
Senior Medical Advisor
Office of Public Health and Science

Tuesday, October 28, 2008

Call to Order/Opening Remarks
Roll Call, Housekeeping

Dr. Anand Parekh

Dr. Parekh called the Chronic Fatigue Syndrome Advisory Committee (CFSAC) meeting to order, welcoming members of the public, invited guests, and committee members and thanking them for their attendance.

Dr. Parekh conducted roll call and confirmed that a quorum was present to begin the meeting, with eight of 11 voting members in attendance (Dr. Papernik was en route and Mr. Newfield and Dr. Oleske were absent). Four out of five *ex officio* members were present. Dr. Laurence Desi from the Social Security Administration (SSA) was absent.

Dr. Parekh noted that Dr. Oleske was unable to attend the CFSAC meeting due to unforeseen circumstances but sent his best wishes and said that he intended to follow the results of the proceedings. Dr. Parekh filled in for Dr. Oleske by moderating the meeting and committee discussions.

Announcements

Dr. Parekh announced the following important CFSAC developments:

- **CFSAC Charter.** At end of August, HHS Secretary Michael Leavitt approved the rechartering of CFSAC for an additional two years beginning in September 2008. Dr. Parekh called the rechartering an important milestone as the Federal government makes the transition to a new Administration.

- **Member Terms.** Several CFSAC members whose terms are about to expire received a one-year extension to put them on par with other members' four-year terms.

- **Increased support for CFSAC.** The Office of the Assistant Secretary of Health has been contemplating for some time how to provide more logistical support and technical assistance to CFSAC. Dr. Parekh announced that for the first time, CFSAC will be supported by with a specific program office within the Office of the Assistant Secretary for Health's purview—the Office on Women's Health (OWH). He explained that the office will be able to improve administrative and management support for CFSAC because OWH:

    - Has a history of successfully focusing on public health issues that cross gender lines and engaging both the public and non-governmental organizations (NGOs).

- Can provide better management support to CFSAC for meeting content, including selecting appropriate experts and interacting with NGOs.

- Will be able to encourage the Secretary's Office to respond to CFSAC recommendations.

- Has good rapport and a good track record of working with other HHS agencies.

- Has a track record for innovation and creativity when raising awareness of important public health issues like CFS.

- **Executive Secretary/DFO.** Dr. Parekh introduced his successor as CFSAC Executive Secretary and Designated Federal Officer: Dr. Wanda Jones, the Deputy Assistant Secretary for Health and the Director of OWH.

Dr. Anand then previewed the meeting agenda:

Tuesday, October 28

- CDC Update by Dr. Steve Monroe and Ms. Sara Wiley.
- NIH Update from Dr. Eleanor Hanna.
- A report on CFS research from Dr. James Baraniuk of Georgetown University, an NIH 2005 grant recipient.
- A working lunch with an opportunity for subcommittee discussion.
- Subcommittee updates.
- Meeting highlight: A roundtable consisting of two preeminent experts on how CFS affects pediatric and adolescent populations—Dr. Kathy Rowe, who traveled from Australia to address CFSAC, and attorney Barbara Comerford, an expert on disability issues with a focus on adolescents and children with CFS.
- Public comments.

Wednesday, October 29

- HRSA, FDA, and SSA updates.
- A panel on CFS medical school education with Dr. Leonard Jason and M. Brownell Anderson from the American Association of Medical Colleges, which provides guidelines on medical school curricula.
- Update on provider education from the CFIDS Association of America.
- Public comments.
- A working subcommittee lunch.
- Committee discussion.

Committee Discussion

Dr. Parekh provided the following information to CFSAC members during their discussion about housekeeping issues:

- The CFSAC charter has been approved. The Committee is authorized to continue to operate for another two years.
- The Department of Education has not yet agreed to attend a CFSAC meeting but CFSAC designated Federal officials will continue to work on encouraging a representative to attend.
- Dr. Parekh will continue to support Dr. Jones and CFSAC when called upon.
- CFSAC members can submit edits of the May 2008 meeting minutes to Dr. Parekh rather than using meeting time to present each edit orally.
- There has been no response from the Office of the Surgeon General (OSG) on producing a CFS concept paper as per CFSAC's May 2008 recommendation.

CDC Update

Stephan Monroe, PhD, Director, ***Division of Viral and Rickettsial Diseases; National Center for Zoonotic, Vector-borne, and Enteric Diseases (NCZVED), CDC***
Sarah Wiley, Associate Director for Policy, ***NCZVED, CDC***
Accompanying Documents: ***CDC Program Update for the CFS Advisory Committee***
CDC Chronic Fatigue Syndrome Research Program Extramural Budget Estimate History 2005-2008
CDC Chronic Fatigue Syndrome Research Program Budget Estimate History 2005-2008
CDC Website Helps Providers Diagnose Chronic Fatigue Syndrome

Dr. Monroe, who has served as a virologist with the CDC for 21 years, was appointed director of the Division of Viral and Rickettsial Diseases in August 2007. He reminded the committee of the two CDC operating centers that address CFS:

- The National Center for Health Marketing, home of the CFS Public Awareness Campaign.

- The National Center for Zoonotic, Vector-borne, and Enteric Diseases, home of the CFS Research Program (CFSRP).

Public Awareness Campaign

Dr. Monroe presented health marketing center data on FY 2008 CFS Public Awareness Campaign activities:

- Sample web and media coverage from May to August

    - CDC website total page views = 401,034
    - Total toolkit fact sheet downloads = 15,133
    - Public Service Announcement (PSA) TV telecasts = 56,283 (since 2006)
    - Radio plays = 25,093 (30- and 60-second PSAs since 2006)
    - 3,318 patient brochures distributed
    - 1,284 healthcare professional toolkits distributed
    - 1,758 healthcare professional brochures distributed

- 2008 Campaign Public Venues

    - May 16-22 San Antonio Public Library
    - May 24-29 American Academy of Physician Assistants National Conference, San Antonio, Texas
    - June 23-29 Maryland Science Center, Baltimore, Maryland
    - July 17-21 Great Lakes Mall, Mentor, Ohio
    - August 14-18 Tacoma Mall, Tacoma, Washington
    - September 4-8 Penn Square, Oklahoma City, Oklahoma
    - September 22-29 Peyton Anderson Health Education Center; Medical Center of Central Georgia; Macon, Georgia

- FY 2009 Planned Campaign Events

    - February West Palm Beach, Florida
    - March Reno, Nevada
    - April St. Louis, Missouri
    - June Hartford, Connecticut

CFS Research Program

Dr. Monroe explained that the objective of CDC's CFSRP is to control CFS by reducing the population morbidity associated with it. The strategic plan to accomplish this objective includes longitudinal surveillance, research, and education. CDC divides the activities to implement these three strategies into five functional areas:

1. **Surveillance and Epidemiology**

The Georgia Longitudinal Study

Researchers completed 1,655 computer-assisted telephone interviews and clinical evaluations of 464 patients at the Macon or Atlanta clinics while awaiting Office of Management and Budget (OMB) clearance to continue the study. OMB gave clearance on June 30, 2008.

Patient Registry for CFS

The first CFS patient has already been referred. The goal is to identify CFS as early as possible to determine onset events and provide effective intervention.

2. Clinical Assessment and Evaluation

- In-hospital studies of the pathophysiologic mechanisms of CFS are being conducted at Emory University General Clinical Research Center (GCRC).
- Researchers have developed questionnaires and protocol and are conducting data collection and evaluation of subjects.
- GCRC evaluates three patients per week. Each patient receives a functional MRI and a complete lab workup over a three-night stay.
- 37 patients have gone through the process so far, including 15 CFS cases and 22 age/race/sex-matched controls. The target is 100 patients, with a one-to-two matching ratio.

3. Objective Diagnosis and Pathophysiology

- A shift occurred in research emphasis in FY 2008 from methods development to clinical evaluation, with previously developed laboratory techniques applied to samples from patients in the GCRC.

- Papers continue to be published analyzing publicly available CFSRP data as far back as the 2003 Wichita, Kansas study. The ongoing impact of making CFSRP data available for Critical Assessment of Microarray Data Analysis (CAMDA) shows the richness of the data sets even though they do not include large numbers of patients.

4. Treatment and Intervention

- Interest is increasing in collaborating with the Mayo Clinic, and CFSRP has set up satellite contact.

- Sleep research results show no measurable difference in sleep disruption between CFS patients and controls, but patient perceptions differed. CFS patients were more acutely aware of how their bodies functioned, leading them to be more accurate at predicting how long it would take them to fall asleep and estimating how long they actually slept.

5. Provider Education

- CFSRP has monitored site usage for CME courses on the CDC website. Monitoring has gone deeper than the number of hits to assess how users navigate through site.
- As a result, CDC is redesigning some pages to avoid issues such as dead ending and to increase the site's usability.

Peer Review of CFSRP

Dr. Monroe noted that the peer review panel for the CDC's CFSRP would meet November 5-7, 2008. He said that the following panel members would conduct a strategic review of program science:

Matthew Boulton, University of Michigan School of Public Health
Anthony Komoroff, Harvard School of Medicine
Gudrun Lange, Veterans Administration
James Oleske, New Jersey Medical School
Peter White, London Queen Mary School of Medicine

The charge to the panel included the questions:

- Are the current missions and goals of the program appropriate?
- What should be the goals and objectives of the program over the next three to five years?
- What activities should the program be engaged in now and in the coming years in order to be on track to achieve the desired goals and objectives?

CFSAC recommended at its May 2008 meeting that the review panel look at whether CDC is conducting appropriate interactions with external expertise. Dr. Monroe said that reviewers will examine whether CDC researchers have the skills to meet their goals intramurally and if not, what kind of external partnerships have been formed.

Ms. Wiley noted that CFSAC members' meeting binders include the CDC research priorities and budget information that the committee requested at its May 2008 meeting.

Committee Discussion

As chair of the CFSAC Research Subcommittee, **Dr. Jason** commended the CDC representatives for providing CFS research funding information. He asked why Dr. William Reeves was no longer the CDC CFSAC *ex officio* and who will replace him. Dr. Monroe replied that in Dr. Reeves' opinion, the CDC *ex officio* should be higher up in the agency organization than the program level. Dr. Monroe said that Dr. Miller has taken the *ex officio* role and hopes to leave behind past tensions to make a fresh start with CFSAC, particularly the Research Subcommittee. Dr. Monroe added that he was appearing before CFSAC to represent CDC at the program level.

CFSAC members then discussed their concerns with information just presented in Dr. Monroe's research update:

- **<u>Case definition of CFS</u>**

Dr. Monroe said that for surveillance purposes, research subjects must have experienced symptoms meeting the CDC case definition of CFS for six months. Researchers are looking for subjects who are just beyond the six-month time period.

Dr. Klimas noted that the prevalence of CFS cases in the CDC study is higher than in some others, which raises concern over how researchers are defining an incidence. She said that if CDC investigators are using a broader case definition than those used in more focused studies, the research will yield different results. It is important for investigators to understand the definition, she said, and if the public had access to the CDC's true raw data from its study, that would solve the problem.

Dr. Monroe replied that he was not aware that the data is not available on the CDC website and that he would make sure that it is. He added that CDC researchers are using the same case definition as in previous phases of the Georgia study.

Dr. Jason emphasized that the case definition is what determines whether investigators end up studying chronic unwellness instead of CFS. He said that without the correct case definition, subjects might score as if they have CFS when they do not. If those cases are brought into the study, it would be very difficult to find biological markers.

Ms. Artman commented that the CDC should be getting to the point of defining subsets instead of broadening definitions.

Dr. Snell: There is not much information from CDC on patient selection and what researchers are assessing. The two key symptoms are post exertional malaise and brain fog. We should know what procedures are in place to measure whether these symptoms are present. This would allow us to make a better judgment about the usefulness of the patient population. Functionally assessing the CFS population is also key in determining disability.

Dr. Jason: Case definition is fundamental to any scientific endeavor. It is a building block in science. As a committee, maybe we should look at case definition issues in dialog with CDC. If those two key symptoms are critical, are they being measured in the population? CFS is close to a health crisis. When Dr. Papernik left the Chicago area, there was nobody able to take his place. Patients can't find people who understand the illness and can treat it.

- **<u>Etiology of CFS</u>**

Dr. Glaser asked what new approaches the CDC is using to determine the etiology of CFS. **Dr. Monroe** said that etiology may not necessarily be part of the GCRC study, noting the potential time lag between when a patient is identified and when he or she is evaluated. Dr. Glaser registered his disappointment that the study is not looking for profile markers. Dr. Monroe replied that researchers *are* taking samples during various tests and testing immune function.

Dr. Bateman expressed concern over the small 100-patient total in the GCRC study. Dr. Monroe said that it is possible that CDC could extend the study and try to get more patients, but the research is expensive.

Dr. Hartz asked whether investigators are including any pre-CFS patients to see if they develop CFS. Dr. Monroe replied that this is not a focus of the GCRC study, which strives for a clear differentiation between well controls and CFS patients.

Dr. Klimas said that CDC has made it known that the agency has no intention of looking for infectious agents. She added that other research organizations are pursuing identification of pathogens and that CDC should be embarrassed not to be looking for them as well. **Dr. Monroe** remarked that the peer review of CDC's CFS research program may make some conclusions about this issue. **Dr. Klimas** said that the previous peer review had already addressed the importance of looking for markers and that CDC should take the advice of its review panels. **Dr. Jason** said that he also strongly suggests that identifying biomarkers is something worth pursuing.

Dr. Hanna noted that NIH funds studies on etiology and does not encourage use of a broad case definition. She said that "if we're going to talk about studying CFS, we have to study what scientists use as their definition to date until we know exactly what we're studying."

Dr. Bateman: How long has the CDC research program been in existence? In 20 years, almost nothing that the CDC has done has reduced morbidity. I don't see CDC as a source for help for me as a clinician to reduce morbidity. CDC hasn't accomplished this objective.

Dr. Monroe: Part of decreasing morbidity is understanding what morbidity is—defining the population so that when treatments and interventions come along, we can assess how effective they are. We must have baseline data before we can measure effects.

Dr. Bateman: How long does that take? Broadening the case definition makes it more difficult.

Dr. Parekh: There are organizations besides CDC that are looking at etiology, including NIH.

Dr. Hanna: If NIH research can in the future develop treatments for CFS and we are working on two different definitions of CFS, how do we get together? What Bill [Dr. Reeves] was doing in Georgia could give us a test group from which we could get validation of what others are doing with the science.

Dr. Klimas noted that Epstein Barr virus can initiate illness, so prevention—including finding a vaccine—could be a goal. She cited a CFS patient who developed lymphoma, but who died of a virus associated with tumors. Despite the evidence, the CDC is still saying that viruses don't matter in the illness even though people are already being

treated for them. She said that the science is there to provide options way beyond the CDC's recommended behavioral treatment and exercise. She remarked that it is extraordinary after 20 years of program funding that no one knows the incidence of cancer in CFS patients.

Dr. Parekh suggested that there is a need for more internal dialog to help address the etiology issue.

- **Patient Education**

Ms. Artman said that, "As patients, we look at CDC and say, 'What's happened? What can you do to make it easier for us to get better?' The website talks about behavioral therapy, but you don't address sleep and interpersonal issues. More could be done to get tangible help in our lives. If you have the illness, you already know what's on the website. The information is very general and could be more specific. Are there tools that patients can use? The CFIDS Association website has tools. It would be nice if they were available on CDC's website as well. Patients need case management tools because sooner or later, we have to be our own case manager."

Mr. Monroe said that the CDC website information is "a tradeoff between putting out self help and cutting the provider out of the equation. Each patient is different and we don't want to discourage people from going to a provider."

Dr. Klimas said that provider information on the CDC website is also general. "If patients rely on a primary care provider, you have to have concrete, practical guidelines for them as well. Providers want to take care of these patients; they just don't know how. It can be done. There is hesitation because there is no FDA-approved drug for CFS. We can still use methods that can and do exist."

[Dr. Parekh called a five-minute break.]

NIH Update

Eleanor Hanna, PhD, Associate Director for Special Projects and Centers,
Office of Research on Women's Health (ORWH)
Accompanying Documents: ***Chronic Fatigue Syndrome (CFS) Research Activities at the National Institutes of Health***
NIH Record ["ORWH Meeting Examines Chronic Fatigue Syndrome"]
Roadmap Transformative RO1 Program (RO1)
Chronic Fatigue Syndrome: Pathophysiology and Treatment (RO1)
Chronic Fatigue Syndrome: Pathophysiology and Treatment (R21)

Dr. Hanna began her presentation by listing accomplishments since 2001 that are related to the ORWH:

- NIH has pursued an integrated, multidisciplinary and interdisciplinary approach to CFS research through a Trans-NIH Working Group for Research on Chronic Fatigue Syndrome chaired by Dr. Hanna.
- The Working Group developed an action plan to enhance the status of CFS research at NIH and in the external scientific community.
- The group developed a program announcement based on recommendations from the October 2000 State of the Science Symposium.
- Between 2002 and 2008, NIH funded more than 20 grant applications on CFS and more than 40 additional applications on CFS and related co-morbidities via multiple funding mechanisms for a total of $6 million for new applications.
- The Work Group deliberated through what avenue to best shape CFS research and decided to focus on neuroimmune mechanisms. NIH published a booklet from a scientific workshop titled *Neuroimmune mechanisms and Chronic Fatigue Syndrome: Will understanding central mechanisms enhance the search for the causes, consequences and treatment of CFS?* (NIH Publication No. 04-5497, June 2003).
- NIH put out RFA OD-06-002 to explicate how the brain as the mediator of the many systems involved fits into the schema for understanding CFS. The RFA specifically solicited proposals from multidisciplinary teams of scientists to develop an interdisciplinary approach to the topic.
- NIH established a Special Interest Group on Scientific Integrative Medical Research to promote intramural interest.
- NIH published Science Series, the first issue of which is *Chronic Fatigue Syndrome: Efforts by the NIH to understand CFS and plan for future research.*
- NIH created the first Integrated NIH CFS website (http://orwh.od.nih.gov/cfs.html), which explains the agency's mission and efforts and targets information for both the public and scientific communities. The site includes a link to a PubMed search on CFS that can be customized by the user.
- NIH held a Grantsmanship Workshop in September 2007 to encourage interdisciplinary research and enhance the competitiveness of CFS researchers. Information presented at the workshop is available on the CFS website.
- As discussed at the May 2008 CFSAC meeting, two trans-NIH collaborations are in place—a Multi-Disciplinary Approach to the Study of Pelvic Pain (MAPP) initiated by the National Institute of Diabetes and Digestive and Kidney Diseases and a meeting initiated by the TMJD Association that brought together experts on CFS, fibromyalgia (FM), TMJD, and a number of other conditions.
- As discussed at the May 2008 CFSAC meeting, plans for the intramural CFS fellowship sponsored by the Foundation of NIH was finalized. Application review was delayed to allow Dr. Hanna to take care of a health matter.

Principal Investigators (PI) Meeting

Dr. Hanna told CFSAC that the 2008 accomplishment that she is most excited about is the First Annual Meeting of Neuroimmune Mechanisms and CFS held on June 20, 2008. Drs. Oleske and Klimas attended. The major purpose of the meeting was to provide an opportunity for the attending investigators to present research and form collaborations. [Dr. Hanna provided CFSAC members with meeting agendas.] Dr. Hanna described the results presented at the meeting as exciting and promising for identifying biomarkers, potential treatments, and proof of concept translational studies on which other scientists can very quickly build. She underscored that this is why she is concerned about having a standard case definition.

The second part of the PI meeting included a team building exercise to foster collaboration on applying knowledge gained from neuromechanism research to better understand CFS through understanding the role of infection as a prototypical insult. The research would build on work done at the University of Washington showing that urinary tract infections are persistent *E. coli*— tissue infections that leaves the tissue open to all kinds of chronic infections. Researchers found *E. coli* not just in the stomach but in other organs, evidence that the bacteria are capable of surviving and persisting. The team building exercise identified methods and tools that researchers would need to function as an interdisciplinary group.

New Funding Opportunities

Dr. Hanna presented the following new funding opportunities for research grants:

CFS Grants

http://grants.nih.gov/grants/guide/pa-files/PA-08-246.html
http://grants.nih.gov/grants/guide/pa-files/PA-08-247.html

Roadmap Initiatives

http://grants.nih.gov/grants/guide/rfa-files/RM-08-029

NIH Bench to Bedside program for extramural science collaborations with intramural NIH scientists.

Dr. Hanna listed **Roadmap Transformative RO1 Program** areas of interest to CFS researchers:

- Understanding and Facilitating Human Behavior Change (explain how it happens).
- Complex 3-Dimensional Tissue Models
- Functional Variation in Mitochondria in Disease
- Transitions from Acute to Chronic Pain

- Foundation Novel Protein Capture Reagents
- Providing Evidence Base for Pharmacogenomics

Plans for FY 2009

- Finish intramural fellowship program application.

- Develop funding opportunities to help develop collaborations and fund some of the methods presented at the PI meeting.

- Welcome the arrival in November of Dr. Chris Miller from Case Western Reserve University as the first National Library of Medicine fellow working under the new Biomedical Translational Research Information System (BTRIS) program in which patient data is used as a research base to come up with novel treatment ideas. The program is creating the next generational research tool for sharing across institutes and for extramural collaborations that will include images and genomic data. A Centralized Repository is aggregating and standardizing all data. An April 2008 town hall meeting about BTRIS is available for viewing at http://videocast.nih.gov/Summary.asp?File=14320.

- Continue to encourage new research and interest in other NIH funding opportunities by working with groups within and outside of NIH, including CFSAC.

- Plan a possible CFS state of knowledge or state of the science meeting for 2010 that could be a step toward a Surgeon General's (SG) letter on CFS as discussed at the May 2008 CFSAC meeting. Dr. Hanna said that the ORWH could plan the state of knowledge (or science) meeting and asked CFSAC members to consider what role they want to take, such as planning meeting topics, recommending or attending as speakers, preparing reports, and generating recommendations.

Committee Discussion

Dr. Parekh opened the discussion of Dr. Hanna's call for a CFS state of the knowledge or science meeting.

Dr. Klimas commended NIH for sponsoring a meeting to encourage the collaboration of neuroimmune PIs. She told the committee that researchers were highly expert and presented information from areas that are new to many in the CFS field. She said that she is tapping information from those researchers, and praised the meeting as a model of open science.

"If our true goal is to have effective treatment and prevention," said Dr. Klimas, "we need initial brainstorming on what the barriers are, then a larger meeting that brings experts to bear on how to refocus and restrategize." She said that the CFS field would

move forward with greater speed and efficiency if researchers improved their collaboration to “get our patients well and keep people from getting sick.”

Dr. Healy asked about an email announcement that she received stating that NIH grant applications can only be resubmitted once. She expressed concern that such a policy would discourage investigators, noting that a “two strikes and you’re out” approach could be disappointing.

Dr. Hanna replied that NIH is revamping the entire grant review system. It is still in experimental stages and the final form it takes won’t be known until it is announced. She said that the acceptance rate for CFS grants is a little bit higher than other grants, but there are not a lot coming in, which is why the numbers are small. Usually people do get funded the second time around, said Dr. Hanna.

Ms. Healy asked whether the proposed state of the science meeting would help feed new researchers into the NIH pipeline. Dr. Hanna replied that yes, the state of the science meetings at NIH are huge and run for many days. Dr. Klimas’s wish to look at treatment and prevention could be one part of the meeting as well could common methodologies and measurements. The meetings draw attendees from across the country and around the world. It would bring new people in and present new ideas that would cause repercussions at NIH and throughout the field.

Dr. Jason turned the discussion to NIH funding, noting that CFSAC has heard estimates for NIH CFS funding that range from $4 -$12 million.

Dr. Hanna said that her own calculations done to assist a Freedom of Information Act request show a total of $6 million. She explained that NIH collects funding information from the institutes and that each institute reports funding differently. The numbers won’t be clarified until the Research Condition and Disease Categorization system is in place to provide consistent information about NIH research. Right now, if dollars are funding both CFS and (FM), they might get counted twice. Also, some institutes do not report grants under $350,000. That’s why the official numbers are always lower.

Dr. Jason said that the CFSAC Research Subcommittee has taken on as part of its mission determining how funds are allocated at CDC and NIH and for what purposes. He asked that the subcommittee have access to data on how many grant proposals come in each year, how many are funded for CFS and non-CFS each year, and the grants that NIH has accumulated.

On the subject of an upcoming state of the science meeting, Dr. Jason suggested that the conference include treatments for pediatric/adolescent CFS and treatments from alternative and complementary medicine. “That’s where patients are getting much of their care whether people like it or not,” he commented, noting that he could share with Dr. Hanna an article that just got accepted in a complementary medicine journal that does a review of such treatments He noted that the literature has been somewhat mixed about what has been successful in that arena.

He concluded that the International Association of CFS/ME (IACFSME) might be interested in helping out with the state of the science/knowledge conference, whether that includes planning and exchanging ideas, working with ORWH as a co-sponsor, or holding the meeting in conjunction with an association biennial conference. He added that Dr. Klimas is the organization's president.

Dr. Hanna noted that providing budget information in a public forum at the detail level desired by Dr. Jason would require a request from Congress. The last such report to Congress was in 2006 at the prompting of the CFIDS Association. "If you want to have Congress ask us specific questions every year and you want me to spend my time getting a report like that together—which is considerable because I have no staff—it's entirely up to you," Dr. Hanna told the committee. "I tried to get that information from the budget office so that I can present it to you and I was told that it can only be done in response to Congress."

In response to **Dr. Klimas's** question on funding rates—including how many grants are funded on the first, second, and third try—Dr. Hanna said that NIH's Center for Scientific Review (CSR) does analysis of funding rates. She said that the data are privileged information due to laws about what can and cannot be revealed, and must come through a Congressional request.

Dr. Klimas commented that it is difficult to give advice to the HHS Secretary in this area when CFSAC does not have the data. Dr. Hanna noted that CSR did an analysis of grant funding and the success rates as part of the 2006 report to Congress. She also suggested that the CFSAC Research Subcommittee discuss the issue with CSR Deputy Director Cheryl Kitt when she meets with the panel.

Dr. Jason emphasized the importance of CFSAC having access to such data so that members know whether researchers are submitting their best ideas and continuing to look for funding, especially if they do not receive it from NIH. It is critical for CFSAC to know the state of the health of the U.S. scientists who are interested in this area. He concluded that without the data, CFSAC members find it hard to understand the larger picture and make recommendations.

Dr. James Baraniuk, Assistant Professor of Medicine, *Georgetown University*
Accompanying Document: *CFS Research: Transition from the Qualitative Consensus Tradition to a Quantitative, Translational, Hypothesis-Driven, Systems Biology Strategy*

Dr. Baraniuk opened his presentation by saying that he was moved to be giving his presentation in the John Eisenberg Memorial Lecture Room. Dr. Eisenberg was the department chairman at Georgetown University and the professor who gave Dr. Baraniuk his start in clinical research.

One of the things that Dr. Eisenberg encouraged was thinking out of the box. Those in CFS have to make a change from the qualitative approach and consensus tradition toward a hypothesis-based type of investigation and new methods, said Dr. Baraniuk. The bywords now are using a "systems biology" or overall approach as to what is going on in multiple areas within an individual.

He gave the example of a patient evaluation that compares pain symptoms (headache, myalgia, arthralgia, sore throat, tender lymph nodes) and psychoneural symptoms (cognitive memory problems, sleep disturbances, exertional exhaustion) with fatigue.

The hypothesis: The sum for the minor criteria will be proportional to the level of fatigue. Significant fatigue for the diagnosis was defined as moderate (3) or severe (4).

Taking the sum of the minor criteria and comparing it with significant fatigue split the population into normal subjects, those with chronic idiopathic fatigue (CIF), and those with CFS. There was no difference by age or gender. Using the sum of minor criteria was superior to using SF-36 to separate the controls, those with CIS, and those with CFS. The implications for quantification of CFS criterion severities:

- Scoring the severity of each CFS criterion provides more information about each individual.
- The sum of the minor criteria correlates with fatigue and is a good predictor of CFS.

The next step is to explore whether cluster or multivariate analysis will identify subsets of CFS subjects in order to find out if there are common mechanisms that are creating subsets of CFS patients. Dr. Baraniuk said that he wants to use the current grant to find objective markers that will go along with those potential subsets. The grant (RO1 ES-015382) is funded by the National Institute of Environmental Health Sciences (NIEHS). Researchers are:

- Doing lumbar punctures in 50 CFS and 50 control subjects to analyze the proteomics of the cerebrospinal fluid.
- Making psychometric comparisons using a lengthy questionnaire
- Making pain comparisons using dolorimetry, isometric hand grip studies, and capsaicin skin tests for neurogenic inflammation.

A problem encountered during the study was spinal headaches, which are very severe and occur after a lumbar puncture. With the idea of making lemons out of lemonade, researchers decided to see what could be learn from spinal headaches about CFS pathology. Researchers discovered that 88 percent of CFS subjects had migraines. In checking the literature, researchers found that 84 percent of the migraine populations report fatigue. In fact, 67 percent of Dr. Baraniuk's chronic migraine patients have CFS. This statistic suggests that there is more than a chance relationship and that perhaps there is a mechanism that is shared.

Migraines plus CFS suggests:

- Autonomic abnormalities
- Neurogenic inflammation

very likely contribute to the high level of overlap between migraines and CFS.
From a treatment perspective, if you identify migraines in 88 percent of your CFS people, you should get them started on appropriate therapy.

From this we wanted to look more at the autonomic nervous system.

<u>The hypothesis</u>: Autonomic control during isometric hand grip maneuvers will be dysfunctional in CFS but not in healthy controls.

- Subjects squeezed a hand strain gauge as hard as they could.
- Researchers measured blood pressure, heart rate, and nasal dimensions (surrogates of sympathetic nervous system vasoconstriction) during a restful "SHAM" contraction.
- Subjects squeezed a hand strain gauge at 30 percent of maximum for as long as they could; researchers determined autonomic responses.

There is something called the muscle reflex. When muscles are activated, nerves stimulate the brain stem and the brain stem stimulates the sympathetic nervous system centers, which send out messages that work to increase blood flow to the local contracting muscle. The dynamics of the squeeze and release of the hand grip stimulate multimodal Type C neurons. We used to think that these neurons would have just one sensory receptor and would mediate just one sensation.

Now it's apparent that they have a wide variety of receptors, especially the multi-modal neurons. It turns out that the acid that's released in the muscle will activate the acid ion channel that then leads to great up regulation of the sensitivity of the TRPV, which depolarizes the nerves and sends an incredibly strong pain message to the brain. In turn, that leads to sympathetic discharge of a variety of chemicals, one of which is ATP, which if it's released in the local muscle area, will have a positive feedback effect increasing the pain.

When you stimulate the sympathetic nervous system, you actually squeeze down on the blood vessels in your nose and as a result, you have an increase in nasal patency. This turns out to be a good measure of autonomic function or in the case of CFS, dysfunction.

Isometric Hand Grip in CFS

- Controls had slightly higher maximum muscle strength, equivalent duration of muscle contractions, and similar pain scores. Researchers expected that the CFS people would have higher pain scores.

- As far as the autonomic component was concerned, the first factor that changes during a contraction is that the diastolic blood pressure begins to increase. That's also the measure that goes up the highest in the healthy controls. There's a very significant difference between the controls and the CFS people.
- The systolic blood pressure goes up next, but usually very late in the contraction, and similarly, the heart rate goes up fairly late.
- As far as the nose goes, the cross-sectional area for air flow also goes up in the controls significantly greater than in the CFS people. In CFS there's a group that has a swelling of their mucosa when they should be constricting.

<u>Conclusion:</u> Mucosal and systemic sympathetic reflexes are dysfunctional in the pathogenesis of CFS and the nonallergic rhinitis of CFS. The primary defect is apparently autonomic dysregulation in the brain stem.

"'It's all in your head." That's now the mission statement for our laboratory," said Dr. Baraniuk. "It's all in your head because that's where most of your nerves are. And that's where the problem lies, I believe."

"That led to our approach to look at cerebral spinal fluid. By way of review, you have blood flowing into a central structure in the center of the brain. As that blood flows through that structure, you have a very carefully generated fluid produced—the cerebral spinal fluid. It surrounds the brain, circulates throughout the day, goes down your spinal column, and we can collect it by doing a lumbar puncture."

<u>Hypothesis</u>: Central nervous system dysfunction is a critical component of CFS and related syndromes such as FM, Persian Gulf War Illness, multiple chemical sensitivity, irritable bowel and bladder syndromes, and other allied conditions. Analysis of the fluid flowing from the brain will identify factors that may indicate the pathology of CFS to direct the creation of new treatments, and serve as diagnostic biomarkers for future testing.

Researchers obtained cerebrospinal fluid from Gulf War Illness (GWI) subjects (most also had CFS), FM subjects (many had CFS), and control subjects for a total of 62 subjects. Researchers compared pooled samples from GWI, pooled samples from CFS, and pooled samples from controls. The identified the proteins that were only present in the GWI and CFS people. They also took individual specimens from the CFS and GWI people and compared them to individual specimens from control subjects.

Dr. Baraniuk: It was mind boggling because we ended up with about 10 proteins that were present only in our CFS group and not present in the control group. The odds of this are about 10 to the minus 15. We're currently doing the proteomic analysis using a high-end orbitrap mass spectrometer to see if we get the same pattern. The key proteins from the CFS-related proteome, I think, give us some potential clues as to what's going on (chart from presentation slide):

CFS – related Proteome (set of proteins)

Protease – Antiprotease Imbalance

- α2-Macroglobulin
- Orosomucoid 1 and 2

Structural Injury

- Amyloid APLP1
- C4B (C3)
- Gelsolin (apoptosis)

Oxidant Injury

- Ceruloplasmin
- Carnosine dipeptidase 1

Vascular Dysregulation

- Autotaxin
- Pigment Epithelium Derived Factor (EPDF)
- Vasoconstrction (ischemia)
- Endothelial proliferation (repair)

Leptomeningeal Activation

- Keratins 4, 10, 16, 17

Structural Repair

- Brain-enhanced hyaluronan binding (BEHAB)

With the new spectrometer, researchers get about 100 times more ions per run, 100 times more peptides, and about 20 times more proteins per run. We haven't broken the code on the patient diagnosis in order to stay unbiased, so we don't know what the mix of controls versus CFS is in the first two-dozen samples. A total of 4,075 were identified in the 24 samples.

The orbitrap system has really dropped down the level of sensitivity so that we're picking up a lot of proteins that we could not pick up previously. We have over 200 unique proteins from these 24 samples. We had a large number of adhesion markers and it will take awhile to sort through the many different names that appear when you start doing the bioinformatic searches. After the next batch, we'll probably be able to start doing quantitative analysis to compare the abundance of proteins between our CFS and control group.

We're making progress—we're getting there. Although this started out with some people thinking that it would be just a blind hog searching for acorns, I felt that we would find specific illness-related proteins. Now, based upon the distribution the types of proteins that we've found, we've been able to extend our work into other grants in other areas where we're currently funded and are starting, for instance, a clinical treatment trial that I hope to adapt to CFS.

Committee Discussion

Dr. Baraniuk: It's important for all of these that we identify by mass spectrometry to go on and do a quantitative assay. For all the proteins, we have that work to do once we

identify which ones are significantly different. Specifically for the cytokines, we're comparing plasma and cerebral spinal fluid.

Dr, Klimas: Are you looking for any pathogens?

Dr. Baraniuk: In the previous study we searched for all bacteria and all viruses and found one protein. But is was not a viral protein.

In answer to **Dr. Snell's** inquiry about conducting an exercise study with a nasal rhinometer rather than a spectrometer: If you're measuring with a nasal rhinometer after peak exercise, you won't see anything. When using a hand grip, for instance, as soon as the person lets go, in the 40 seconds that it takes to do a measurement in a control person, they're already almost back at normal, so you'll miss it. One thing that we are going to look at, though, is that there's more lability in the recovery period and more lability in the nasal acoustic rhinometry measures before the exercise period, so it would indicate that the sympathetics are continuously turning on and turning off and are totally dysregulated.

I'm impressed at the number of hits that I get for transthyretin with a mutation that causes it to misfold. There's a transthyretin-mediated illness that is a misfolding of protein leads that leads to small bleeds in the brain that may be repaired or may lead to terminal strokes. It leads to young onset dementia and massive hemorrhage in the families who have these mutations. Given the number of protein candidates we're picking up that have this mutation, I would wonder if this type of cerebral amyloidosis vasculopothy is a cause.

When asked what I would hypothesize about this protein that I'm finding that is altered, I'd have to go back and check every one of the peptides that we get for this protein to determine if we actually have the peptide that shows direct evidence of change. Only a third of CF is genetic in nature so I don't think this is a true syndrome of the amyloidal vasculopathy, but it may be a co-factor, so that with other stressors and these variants, you develop deactivation.

We will also be following up this link with the migraines and the tryptans and CFS.

A Final Word on Dr. Hanna's Presentation

Dr. Parekh invited CFSAC members to submit comments to Dr. Hanna on her 2010 State of Knowledge/Science CFS Conference. Dr. Hanna said that she would take the feedback to the Trans-NIH Working Group meeting and report the results to CFSAC.

[Dr. Parekh called a break for lunch.]

Subcommittee Updates

Education

Ms. Healy, Subcommittee Chair, reported that the panel:

- Assisted the Research Subcommittee in crafting a letter for the HHS Secretary concerning a concept paper on CFS, a first step in the process that would culminate in a letter from the SG officially recognizing CFS as a major public health problem.

- Procured this meeting's speakers on pediatric CFS and CFS in medical school education. A continuing subcommittee concern is the fact that so few providers feel comfortable and confident in treating CFS patients. The following day's data from the CFIDS Association on web log-ins for Continuing Medical Education (CME) courses on CFS will underscore the need for providing more information to practitioners.

Dr. Klimas emphasized the importance of working with the upcoming NIH state of knowledge conference to produce practical results. She also stressed finding better ways to use HHS contacts to integrate CFS throughout the education system for children, adolescents, and practitioners in order to reach a wider audience throughout the United States.

- **Dr. Willis-Fillinger** reported that the subcommittee has sent a letter to HRSA's Area Health Education Centers (AHECs). As discussed at the May 2008 CFSAC meeting, AHECs focus on getting members of the medical provider workforce into the appropriate settings, retaining them in the areas where there is need, and increasing the diversity and competency of those providers. AHECs run 53 grant programs for 1,200 institutional grantees in 46 states and the District of Columbia. Dr. Willis-Fillinger reported that AHECs are now on notice that CFS is an important public health problem that needs to be integrated into medical education.

Research

Dr. Jason, Subcommittee Chair, reported that:

- The subcommittee and CFSAC activities have benefited from Dr. Miller's and other CDC representatives' openness about agency budgeting. Dr. Jason said that Dr. Monroe may have an interest in representing CDC before the subcommittee to explore financial matters further.

- The subcommittee met with Dr. Kitt in an ongoing dialog about issues concerning how CSR reviews CFS grants at NIH.

Dr. Hartz said that a language barrier exists between scientists and administrators. Well-intentioned people at NIH want to do the best thing for science, he said, but they are not able to see the problems in the same way that researchers do—they are not able to understand researchers' point of view.

Dr. Glaser said that the Research Subcommittee's assessment of the NIH special emphasis panel review process has uncovered at least three years worth of study sections in which the reviewers did not always fit well with the subject of a grant proposal. He brought up the possibility that some grants may not have been funded because the process did not fit the subject. The subcommittee has informed NIH and suggested what types of reviewers would be better suited, but the panel has not seen an impact. The subcommittee is concerned that PIs will be discouraged by the rejection of their proposals, not because their grants are not sound, but because of inappropriate reviews. The subcommittee acknowledges that it is not easy for NIH to attract reviewers and has suggested various solutions such as flexible review deadlines.

Dr. Hartz suggested that study groups could use a process similar to the one used by academic journals to review research papers. Grants could be sent to the reviewers rather than requiring reviewers to travel to Washington, DC, for a study group. Even with this improvement, NIH would still have to deal with matching reviewers to grant proposals, he said. Under the current process, junior or even senior investigators could become discouraged to the point that they do not present proposals. Researchers want someone who understands the science and can give a fair assessment. Those who serve on study sections are expected to review every grant. No one wants to hear from a reviewer that he or she feels unqualified to review a certain grant.

Dr. Jason commented that the Research Subcommittee has a relationship with Dr. Kitt in which she's willing to come back and continue a dialog with the group. In response to **Dr. Klimas's** question about whether the subcommittee would be making a recommendation on the review process, Dr. Jason responded that the subcommittee needs more time, planned to meet again during the current CFSAC meeting, and would hopefully come with back some recommendations.

He added that the CFIDS Association had a recent call for proposals and got 30-35 submissions, a refreshing indication that researchers are interested in studying CFS. The funding is needed to go along with that. The RFA that occurred several years ago also had a good turnout, which is more evidence that there are good investigators out there. He said that he and Dr. Klimas recently attended a meeting of the Japan Fatigue Society, which has several hundred members. He said that the United States may be able to learn from the Japanese model about how they have nurtured the next generation to enter the field.

Dr. Klimas inquired whether NIH would be issuing another RFA, to which Dr. Hanna replied that it would be premature to do an RFA now. She said that the current focus is to find the money to help support the ideas that came out of the recent neuroimmune

mechanisms meeting so that researchers can form the collaboratives necessary to work on the many opportunities that are available.

Dr. Klimas inquired whether there is a way to informally mentor researchers who responded to recent grant opportunities but who were not funded, so that they can produce fundable proposals. Dr. Hanna suggested talking before the upcoming grant proposal workshop that she will present at the IACFS/ME meeting so that she can tailor it according to new investigators' needs. She said that she will also be encouraging collaborative researchers within and outside of the CFS field.

Dr. Jason highlighted the upcoming March 2009 IACFS/ME meeting in Reno, NV, noting that the group has met every two years since 1992. The association wants to encourage attendance by as many people as possible who are interested in learning about or submitting information on the latest science in the field. He said that the group is still accepting abstracts.

On a different topic, Dr. Jason noted that the amount of money provided in each grant may not be the most important thing in encouraging investigators. Even providing seed money on the level of $10,000-$20,000 could do a tremendous amount to get young investigators interested in researching CFS, he said. The IACFS/ME is making several awards at the Reno conference to try to give some recognition.

Dr. Kitt commented on the issues raised by Dr. Klimas concerning R21s. NIH is discouraging new investigators from using R21s, Dr. Kitt explained. NIH has had a Congressional mandate for a year and a half to fund as many new investigators as possible through RO1s. "If you are a new investigator, apply now, and apply often," she said. "The institutes have targets to reach to fund new investigators. If the CFIDS Association knows who those new and junior investigators are, please let them know to start applying for RO1s right away. They are really being funded at a much higher success rate than established investigators."

She added that the definition of a "new" investigator will change as of May 2009, with more details on the change to be spelled out in a press release scheduled for the first week of November. In the past, "new" meant any investigator who had never received NIH support, even though that person may be a well-established investigator with other funding sources. An early stage investigator will now be someone who is no more than 10 years past earning their terminal degree. Clinical investigators will get more leeway and be defined from their last training. Early stage investigators will be reviewed together as a group and will not necessarily be in competition with established investigators. More information is available on the NIH home page under "Enhancing Peer Review," she said.

Quality of Life

Ms. Artman, Subcommittee Chair, said that her panel:

- Emailed recommendations to Dr. Parekh and requested that they also be distributed to committee members for friendly amendments before the recommendations are discussed the following day.

- Has as a primary concern CFS patients' continued lack of access to medical care. The subcommittee would like to invite Dr. Daniel Peterson to the next CFSAC meeting. Dr. Peterson is part of the Whittemore Peterson Institute in Reno, NV, a Center of Excellence established by the state in its school of medicine. The subcommittee would like Dr. Peterson to talk about how to establish a program using private and state funds to attract researchers into the CFS field.

Having hit a stone wall in the area of medical and employment disability issues, the subcommittee has decided to temporarily table the subject and take up other issues of concern. These include:

- An effort being spearheaded by Mr. Newfield to look at employment issues, not just for people who are going on Social Security disability, but for those who are trying to continue to work. The subcommittee is looking at what compliance issues relate to CFS, with the idea that there should be standards set that facilitate the reentry or continued employment of someone with CFS who is trying to work. The subcommittee would like to make employment issues the focal point of the next CFSAC meeting, covering CFS patients who never left the workplace and are trying to remain as well as those attempting to reenter the workforce. She said that the Social Security Administration's Ticket to Work Program can be challenging and that people do not know what else is available. Some individuals have specialized skills and their loss has a significant impact on the field in which they work.

- The issue of providing patients access to more accurate information. Ms. Artman noted the plethora of erroneous information about CFS treatments and cures. The subcommittee would like to see more accurate information available. At the end of the day, patients are their own case managers and they need reliable information to be able to manage their condition. Everybody needs a physician, said Ms. Artman, but you can't see your physician every day. You need to be able to manage your own case.

- The possibility of having celebrity patients address CFSAC meetings to give the meetings and the illness visibility. Unfortunately but not surprisingly, no celebrities wanted to come forward and reveal that they have CFS.

- Attracting more patient participation in CFSAC meetings, including the issue of web casting. Ms. Artman said that she compiled an 800-organization list of CFS interest groups in the United States by starting from the 2000 CDC support group directory and including additions and corrections by various groups. The subcommittee would like to invite those on the list via email or letter to CFSAC

meetings and let them know what the committee does. She said that many CFS patients have no idea that CFSAC exists, that they can access the minutes on the web, and that there are people working for them. Knowing that people care about them would increase the morale in the patient community.

Dr. Snell commented that although CFSAC debates many issues, there is no debate that the quality of life of a person with CFS is "dreadful. We don't need a biomarker to tell us that. We don't need people to get huge sums in research funding to tell us that. Really, we can do something about it and we should be actively involved in doing something about quality of life while we're waiting for the cure."

Dr. Klimas expressed interest in opening discussions with the Departments of Labor and Education, since much of what CFSAC discusses also involves these areas. She said that the departments' input could be helpful to the committee, and that they might like to know how CFSAC work could impact their own agencies.

Dr. Jason commented on the great potential in eventually holding a Surgeon General's workshop on CFS, and said that CFSAC's May recommendation that the HHS Secretary request a concept paper on CFS to get the process started should be considered one of the committee's critical issues.

Dr. Parekh replied that the Secretary's office has not acted on that recommendation.

CFS Adolescent Roundtable

Dr. Katherine Rowe, Consultant Physician, *Department of General Medicine and the Centre for Adolescent Health at Melbourne's Royal Children's Hospital (Australia)*
Accompanying Documents: *Outcomes for young people with CFS in Australia; Dr. Katherine Sylvia ROWE: Brief CV; A Pediatric Case Definition for Myalgic Encephalomyelitis and Chronic Fatigue Syndrome*

Dr. Parekh introduced the meeting's featured speakers by noting that CFSAC has touched on the issue of CFS in adolescents and children, but the committee's focus has been more on the adult population. After considering what CFSAC could do to draw adequate attention to the pediatric population, members recommended a roundtable of experts to discuss the quality of life and disability issues faced by adolescents and children and some of the interventions available to help. Dr. Parekh then highlighted the accomplishments of each speaker:

Dr. Rowe

- Extensive clinical and research experience in the management of children and adolescents with behavioral and learning difficulties; ear, nose, and throat problems; auditory processing difficulties; and CFS.
- Heads several specialist clinics for CFS within the Royal Children's Hospital and the Centre for Adolescent Health that have been used as the basis for evaluating the management and outcomes of young people.
- Was awarded the prestigious Royal Children's Hospital Chairman's Medal in recognition of her contributions to teaching, research, and clinical practice over many years.
- Over the past 35 years, has authored/co-authored numerous books/chapters in books, monographs, papers in peer-reviewed journals, contract research, and evaluation reports, and presented more than 250 conference papers and invited keynote addresses.

Ms. Comerford

- Has concentrated her law practice for the last 23 years in the area of disability law, with an emphasis on ERISA [Employee Retirement Income Security Act] and individual long term disability insurance, Social Security Disability, and state government disability pensions.
- Has sat on a number of boards including the Northeast New Jersey Legal Services Board, the American Association of Chronic Fatigue Syndrome, the CFIDS Association of America, and the New Jersey Chronic Fatigue Syndrome Association.
- Co-authored a Physician Manual and wrote the chapter on "Proving Disability." The manual was written to educate physicians on recognizing and diagnosing CFS and was published by the New Jersey Academy of Medicine and the University of Medicine & Dentistry of New Jersey and was distributed to physicians throughout New Jersey and the United States. It remains the only such Physician Manual ever published in the United States on CFS.
- Has been active in her community, where she is recognized as an expert at dealing with adolescents and children with CFS.

Presentation of Dr. Rowe

Patient Characteristics

Dr. Rowe began her presentation with a general description of the young people with CFS seen at the Royal Children's Hospital (RCH) clinics in Melbourne, Australia, a 150 year-old city originally settled during a gold rush and located in the state of Victoria in Southern Australia:

- Young people come to RCH from all over Victoria and Southern Australia.
- About 1000 young people have gone through the clinics over the last 15 years.
- The clinics see about 70 new patients each year.

- About half of the Australian young people with CFS are seen at RCH.

Dr. Rowe then presented general characteristics for CFS patients:

- Unwell for at least six months.
- Defined onset of CFS over hours or days.
- Fatigue exacerbated by exercise and not relieved by rest.
- Neurocognitive symptoms.
- At least three of the following—myalgia, arthralgia, headaches, sleep disturbance, abdominal pain, dizziness, nausea, pharyngitis, and lymphadenopathy.
- Male to female ratio of 1:3. Age range 5-18.
- Majority of cases followed an infective illness. Most common is glandular fever, then cytomegalovirus, varicella, and Ross River Virus. Patients often describe a gastro or "flu-like" illness.
- Unlike patients in other RCH clinics, the majority of patients (more than 85 percent) with CFS are Anglo-Celtic. This ethnic group makes up less than 40 percent of the Australian general population. About 12 percent of the CFS population is Northern European, an ethnic group that makes up less than 1 percent of the general population. 100 languages are spoken in RCH and it is used by all ethnic groups, so access to healthcare does not play a role in who makes up the CFS population.
- Southern Europeans and people of Asian descent are strongly under-represented in the CFS population. Ten percent of Australian adolescents in the general population are Southeast Asian.
- 17 percent of patients have another family member with a similar illness, meaning that there is a very strong family history in many CFS cases.

Dr. Rowe said that the onset of CFS occurs most commonly in the Australian winter months of June and July. Out of 24 key CFS symptoms, the most frequently reported is prolonged, persistent fatigue related to activity, followed by headache.

She told CFSAC members that depression is not a more significant issue for the CFS population. The base rate of depression among adolescents in Victoria is 20 percent, which is comparable to the rate among those with CFS. There is a 7 percent increase in depression among the more severe cases of CFS that is associated with:

- Severity of symptoms.
- Delay in diagnosis.
- Patient "not being believed."
- Family history of depression.

There is a slight increase in anxiety among CFS patients compared with the control group, particularly with panic attacks, which occur about 10 percent more frequently. These attacks are associated with:

- Severity of the illness.
- Success of educational arrangements.
- Depression.

Dr. Rowe said that many psychiatrists in Victoria hold a very strong view that CFS in adolescents is related to overanxious parents. Her own research shows absolutely no difference in parental bonding between the controls and those with CFS. Only one item out of 20 registered as significant—the controls thought that their parents were "too nosey." Parents themselves report being more anxious and "protective" in two instances:

- If the CFS diagnosis was delayed.
- If the illness was severe and the parents either had difficulty convincing people that their child was sick or they didn't know what was wrong with their child.

Dr. Rowe presented results of a second-order factor analysis of the first 200 young people seen at RHC that produced a goodness-of-fit index of 0.999, a level almost unheard of in medical practice. Dr. Rowe said that young people were consistent in the way that they described their symptoms—when the same factor analysis was done on the next 200 patients, only one factor shifted. Fifteen years ago, CFS was not recognized at all, according to Dr. Rowe, and young people were labeled as lazy, suffering from depression, or "just being adolescents," among other wrong conclusions.

She pointed out two highlights from the neurocognitive first-order items and standardized factor loadings:

- An adolescent who describes having difficulty with speech to the point of being "lost for the word" is very uncommon in any other setting than CFS.
- The prevalence of vivid dreams and nightmares was a surprise. Most patients were worried that they were "going nuts" because of confusion over whether a dream event had actually occurred.

The structural equation regression modeling showed that among the young people studied, CFS was primarily a post-infective condition. The modeling showed CFS as primarily immunological and mediated by neurophysiological symptoms, which were then loading on the others. Dr. Rowe noted that the adjusted goodness-of-fit was 0.99, again showing consistency in the way patients responded. Cluster analysis defined three groups based on the severity of illness, with very little overlap between groups.

Conclusion: *Research showed adolescent CFS patients to be a clearly defined group, usually post infective, and often of a particular ethnic background.*

Management Issues

In managing CFS, the aim is to **reduce the consequences of chronic illness**:

- Loss of social confidence.
- Educational disadvantage.
- Physical deconditioning.
- Prevaricating about participating in activities (using the illness as an excuse for not doing things).

Management involved getting young people to make some decisions in all of the above areas, because the consequences of the illness were actually greater than the illness itself.

Symptom Management

Dr. Rowe said that she asks patients about their most serious problems, then concentrates on those. An interesting aspect of symptom management is that although CFS headaches are not migraine headaches, only anti-migraine medications relieve the symptoms of an adolescent with a CFS headache, according to Dr. Rowe.

Lifestyle (Energy) Management

RCH leaves it up to young people to work out a program that balances social contact, academic input (when is the most productive time to be at school and for how long), physical activity, and commitment to attend something on a regular basis. The patients work out the proportions, but they are not allowed to leave out anything on the list. Dr. Rowe said that she has never had a patient who could not work out his or her program.

She cited an eight year-old patient in second grade who worked out his own schedule, including how much school he was going to attend. Although he still looked sick when he arrived for a checkup after six weeks, he said that he felt much better because “I have my life back.” He also no longer felt guilty about attending school part time because it was “part of the program.”

Advocacy is an important factor because having flexibility in schooling is invaluable. Options can include a school liaison, support in the school/visiting teachers, and distance education.

Family and emotional support

Advocacy

Dr. Rowe said that she has spent the most advocacy time trying to sort out a plan for school, noting that having flexibility in schooling has been absolutely crucial.

Visiting teachers have been invaluable.

- Victoria makes teachers available for those who are unable to attend school due to a physical illness, and they act as a liaison between the family and the school. The teacher sees the young person about once a week for an hour.
- Having a visiting teacher involved gives the illness some legitimacy. The visiting teacher can discuss school issues colleague-to-colleague, which makes an enormous difference in getting favorable arrangements for the student.
- Visiting teachers have between 30-60 students at one time.
- The Education Departments regularly try to eliminate visiting teachers, claiming that they are not necessary. Dr. Rowe said that every time a discussion arises about whether visiting teachers are needed, she produces the evidence of how crucial they are in getting CFS patients back in school.

Distance education is an option for students, who sometimes take a single subject just to keep them in the loop.

Transition to university, transition to work, income support, and support groups are also advocacy areas where Dr. Rowe and her staff spend a large amount of time.

Education System

The Australian secondary education system includes grades 6-12 and has three sectors—government, Catholic, and independent. Sixty percent of students attend a government school; the remaining 40 percent are split between Catholic and independent. The secondary system feeds directly into the tertiary system, which includes university, technical, and other further education.

Funding for university education runs from full fee to government-supported deferred part payment, which is repaid once the student is earning. To survive at the university level, most people need part time work, which is an issue for CFS students. They often seek disability support.

School Liaison

Dr. Rowe helps students develop a personalized program based on:

- Student aspirations.
- How much time they can manage at school.
- How to use that time most productively

  - Which teachers do the students like? If a student has a teacher who does not like the student or who doesn't have good teaching skills, there is much less incentive to go to school. A student who is going to school for a couple of hours a week really wants a teacher who is worthwhile.
  - Which subjects do the students like?
  - What do students need to achieve success in their careers?

- Timetable issues.
- Logistics for the family.

Education Issues

- Students need access to visiting teacher services.
- Classes are rarely taken completely through distance education/home schooling.
- The student's program is always negotiated through the school.
- A lot of advocacy problems exist in the transition between secondary and university levels.

Follow Up Data for 380 Young People

- Average age of follow-up patient is 23 years, with a range of 13-33.
- Follow up occurred 1-19 years after onset of CFS.
- Follow up included 95 percent of the first 277 patients.
- 600 questionnaires were returned.
- The average duration of illness is 4.3 years until well, with a range of 9 months-11 years.

Outcomes

- 20 percent of students used the visiting teacher service.
- 11 percent used some distance education.
- 90 percent of CFS patients went on to post-secondary education compared with 70 percent for the general population. CFS students said that by going on, they could earn more per hour even if they couldn't work full time.
- 25 percent used disability support funds at some stage.
- 64 percent were in full time work or study, with 21 percent more than half time and 15 percent less than half time. Only one or two percent who did not go on to work or more schooling. Those inevitably had other mental health issues that were quite clearly unrelated to CFS, including substance abuse, severe anorexia, and severe obsessive compulsive disorder.
- The duration of illness was a mean 4.3 years among the 108 patients who described themselves as being well.
- A large percentage of patients who described themselves as "not recovered" got scores in the "quite well" range on wellness tests. They scored a mean of 6.3 on a scale of 1-10. Some of those who considered themselves "recovered" said that they functioned well, but did not score as being "well."

Three Clinical Groups

- 25 percent in the least severe group.
- 50 percent in the intermediate group.
- 25 percent in the most severe group.

- No difference between the groups in duration of illness.
- The difference in severity was not related to improvement with time.
- CFS patients had a lower rate of dropping out and switching courses.

Those who scored as "well" compared with the whole CFS group:

- Found professionals more helpful.
- Had an earlier diagnosis and received help earlier.
- Had fewer problems with doctors and teachers (30 percent of the "well" compared with 60 percent of the whole group).
- Used alternative treatments in a similar way with a similar response—said these treatments had particularly helped.
- No difference in the severity of the illness or the age of onset.

Comments from the young people:

- "Having an advocate for school was very important."
- "After 11 years I suddenly found that I do things and recover afterwards. I could not attribute this to anything obvious."
- "Strategies have helped me cope with illness and with life." Many of them handled university much better with a lower rate than the average for dropping out and switching courses. Once CFS patients had the opportunity to go to university, they made the most of it.
- "Being able to present information to school and have a plan of action helped greatly. When the school recognized that it was a real medical problem, it was much easier from then on."
- "It is important to know that others have recovered and that I can as well."

Conclusions

The key message in the follow-up data was that schooling and how that was managed was really crucial. The only patients of Dr. Rowe's who needed an inpatient stay were those for whom she could not sort out school issues.

- Depression wasn't predictive of outcome; however, a small but significant proportion was depressed.
- How the illness is managed, especially at school, has a major effect on outcome.
- Support and flexibility in approach are essential. If the education system is inflexible, other problems more frequently develop, including major mental illness issues and family stressors.
- Planning and negotiating a program with the young person ensures cooperation.
- The majority of patients eventually functions well or at least "have a life."
- Of the 60 percent who improved, about half of their parents say their children are robust, and half say that while their children have improved, they still have to watch it and they take longer to recover.

Committee Discussion

Dr. Rowe noted that the majority of her adolescent CFS patients improved within 5-7 years, the average improvement time was 4 years, the patients were still improving much later than 7 years, and some of them will continue to improve. She reemphasized that there were no patients who got worse unless they had mental health issues or hadn't managed to sort out school issues.

Dr. Hartz: CFSAC has talked a lot about subgroups of patients. You said some things that made it sound like this was a fairly homogenous group of patients. It that a fair assessment, that they have a similar type of etiology?

Dr. Rowe: I think it is a fair comment. 85 percent of patients identified an infective onset. The others said that there was a sibling unwell at the same time or that they had had a post operative infection, so in those cases, there was also something that pointed to an infective component rather than a viral component. There were only two or three out of a thousand who related it to a hepatitis immunization.

There are not many alternatives to look at for the causes of CFS in young people. That's what makes it a clean group. You've got to differentiate for depression and make sure it's not an autoimmune disease, Crohn's disease, or an endocrine disorder, but there's really not terribly many things that it can be as an alternative.

Dr. Jason: A skeptic might say that the prognosis is better in young people, which is the group to whom you gave the treatment. Was it the treatment or the passage of time that led to those effects? Do you think there needs to be a randomized control trial for this approach?

Dr. Klimas: But you're not going to deny a child schooling or socialization to answer that question, so the only thing that you might randomize is the underlying symptom management.

Dr. Jason: Think of it this way—there are probably thousands of kids who aren't being provided this type of program right now. If you don't have enough programming for all of the kids who have these symptoms, you could certainly try alternative types of programs that have different components where you could have standardized medical care compared with an enhanced program. There are multiple ways of potentially doing it. The key question is, can you give us a sense of whether these kids might have been able to make these changes on their own over time, or was it the intervention? Certainly I believe that the intervention made a difference, I'm just bringing the point up about whether we need a control trial or not.

Dr. Rowe: I'm not sure. The first 100 kids I saw were actually part of a randomized controlled trial for gamma globulin. They had an average of 18 months of illness prior to seeing me—the range was six months to seven years. They virtually had to be bed

bound before they came into the trial. I don't see young people now who are as severe as that because we save them much earlier, so these were ones who effectively had no intervention before the gamma globulin trial. The outcome of that trial was that it actually made a difference. The placebo group in the gamma globulin trial had a similar improvement rate to this group. All of those had educational input.

I must admit early on that I wasn't as good with the social side of it. Even though some of the patients missed the best part of four years of schooling, they could still do quite well and then go on. What they did have difficulty with was the social learning that they had missed out on. Our schools are a bit of a jungle between years seven and ten. The girls are silly in years seven and eight and the boys are silly in years nine and 10. Those teachers spend an awful lot of time on crowd control and not an awful lot on learning, but there's a lot of social learning going on then.

CFS patients describe not knowing what to do. When you go out, what do you wear? When someone says a particular thing, how do you respond? How do you act in this or that situation? All of that discussion goes on in those early secondary years. Social anxiety keeps CFS patients inside, not participating, and losing confidence so that they have trouble getting back into society. One patient said that she spent two years watching people in various settings in order to figure out what to do. She felt silly because everyone else knew what to do. That's why I now put social learning right at the top of the list. That's the thing that is the most debilitating. That social anxiety is what really kicks people inside.

Academically, CFS patients seem to be able to manage just fine so long as you don't overload them. They can produce the quality; the quantity is the issue. But if schools insist that these students have to complete everything at every year level before they move up, they're going to drop out of school and we're going to have trouble. I've spent most of my time seeing that schools allow students with CFS to achieve a standard on core knowledge, and they've done very well at university.

[Dr. Rowe related the story of a patient who completed her honors arts degree and was enrolled for her PhD. She had not fully completed a single year of schooling since grade six, including her university entrance year. But she did a full arts degree and did extremely well.] They've gone into medicine, they've gone into dentistry, they've gone into physio…and those are the faculties that we've had the most trouble with because they've been the least flexible.

Why do there need to be hurdles to CFS students' achievement? Even if they can't work full time, they can certainly earn a lot more than they could on disability. They've certainly got more of a life and some self esteem, and they're part of society. I think that if we don't get anything else right, we've got to get schooling right. We've just got to have that flexibility.

Dr. Snell: Have you noted any reoccurrence of symptoms periodically?

Dr. Rowe: Ten percent of my CFS patients indicate that if they've been well, they've had a recurrence of symptoms, but it's not lasted very long. It's almost like a post traumatic stress (PTS) response because they come in white as a sheet saying, "I've got it all back again." They've had an intercurrent illness of some sort and all the symptoms have returned as one would expect, but the young people are absolutely terrified that it's going to last for years. They just about go into meltdown. I tell them that it is common to get symptoms back and that I've never had someone go beyond six months with it. I've had a couple that have had a short illness that's lasted six months and then they've had a full blown chronic fatigue after that, so it's gone the other way. It can go both ways.

Dr. Jason: When the reoccurrence takes place, do you see any change in the measurements for HHV6 [human herpes virus 6] or EBV [Epstein Barr virus] after the occurrence?

Dr. Rowe: I have done the HHV6, but not the EBV. It's only between 50 and 60 who have ever been exposed to EBV within this group, but for 30 percent, it's been the documented trigger for CFS. A change in titer in the beginning has been the trigger for the CFS. It's the most common cause. Our labs have kept the serum from the beginning and have said that the titer is the same.

Dr. Klimas: Your success rate on symptom management is a lot better than any that we've heard from other very well experienced clinicians. I'm sure it's because you incorporate all of this and that you've convinced your school systems and social systems to work with you. That's such a struggle here. But I'm curious what your mainstays might be when you say "symptom management."

Dr. Rowe: I usually ask patients what the biggest problem is for them. The top of the list differs, although multiple symptoms are present in all patients. The biggest problem is sleep. Usually that means that we regulate sleep using melatonin. If it's disturbed sleep, we give patients something so that they don't wake frequently because that leads to additional pain. We have the biggest problem with boys being up all night and asleep all day because they're on the Internet, and they've got no intention of changing. Getting them back to a day/night cycle is helpful.

Headache is next. Over the last 15 years, I've found that the only things that work for the headaches are the migraine preventers. I never have trouble with adolescents coming off medication, because they continue to take something if it works, and stop taking it when it doesn't work. It's very uncommon for the headaches not to be managed by one of the migraine medications even though I'm quite sure that the headaches are not migraines. There's no strong family history in the vast majority of CFS patients.

Another thing that I've been much more actively treating recently is dizziness and neurally mediated cardiac symptoms. I am finding that this is also fixing the nausea that I had great difficulty managing. I'm finding that as soon as we've been able to fix

patients' blood pressure, they've come back and said that they haven't been nauseated at all. A colleague of mine informed me that nausea is a common symptom of dysautonomia.

Dr. Jason: You noted that the Asia Australians tended to have a lower prevalence of CFS. When we look as Asian Americans, we tend to see lower rates. And yet in Japan, rates seem to be relatively higher. Why are we seeing such different patterns in Australia, Japan, and the United States?

Dr. Rowe: Japan has a very highly stressed population and a long history in their children of sleep deprivation or disturbance. It is very uncommon for CFS to be post-infective in Japan. It was much more related to stressed children. Their highest rate was the transition between primary and secondary school when they all had to sit for exams, spend long hours at school, devote weekends to extra tutoring, get to bed at 2 am or 3 am, and get up quite early the next day to get to school. CFS was really a chronic sleep deprivation issue.

Responding to a question about the link between HLA [human leukocyte antigen] and CFS, Dr. Rowe said she had not measured HLA levels in all of her patients, but that she has read other research where there has been an association.

Dr. Rowe also reiterated that she does not see socioeconomic or cultural reasons why such a large percentage of the Australian CFS population is Anglo-Celtic.

Ms. Comerford's Presentation

There is a large disconnect between scientists, attorneys, and school administrators. I am trained to look at a problem, look for a solution to the problem, resolve it, and go on. Unfortunately, when you're dealing with something like CFS and the state of the science and the medicine, it is completely frustrating. I am someone who specializes in disability law, and my specialty had been dealing with adult disability.

I have incidentally come upon the issues dealing with adolescent CFS because my daughter had it; I've represented several hundred CFS individuals—male and female—who have children who have it, and then I get calls from people around the country who are being investigated by family services because they are assumed to be assisting a child in symptom manifestation and magnification. That becomes a serious thing because a number of these people are looking at action by the authorities against them.

When I was asked by CFSAC to address the issues of adolescent CFS, I had to look at it from a broader perspective than just the legal perspective. There are Federal statutes in place that are carried out by local school districts and by post secondary educational institutions that address children with disabilities. By their estimates, the Individuals with Disabilities Act in Education (IDEA) and Section 504 of the Federal Rehabilitation Act help roughly between 4-6 million disabled kids a year. That's a wonderful number,

but based on Dr. Jason's findings in the prevalency studies, where it seems that CFS is underreported, particularly for some of the minority communities, I am extremely concerned that there are a number of students—adolescents in particular—who are really not even being reached or diagnosed or identified and as a result, are being deprived of all of those protections as well.

So not only do you have lower- middle- and upper middle class kids who are perhaps not being identified, but the ones who are identified are being dismissed as either pretending that they are ill when they are not, or as having parents who are projecting an illness on them that isn't real. The CFSAC type of committee is extremely important. It's not just important because everyone is fleshing out issues. It's important because on a practical level, it makes a difference in individual lives of people with this illness.

I suffered from CFS in the late 1980s when there was little known about it. I was in the middle of litigating a case and I was getting sicker and sicker. When I went to the physician, he ran some titers on me. My EBV virus was through the roof and my shingles titer was the highest he had ever seen. He said, "With the symptoms you've been presenting with for months, I have a tendency to think that you might fit in with this case definition that I just read about [CFS]. Actually, there's really nothing that can be done. We can maybe treat symptoms, but then you have to just rest." A few months later, I couldn't get out of bed. As far as the PTS aspect of it, to this day, when I get sick, I am terrified that I'm getting sick with CFS again and that it will crash my life.

It became an even more hideous reality for me when my teenage daughter, who was a statewide and national gymnastics competitor, suddenly started developing all of the same symptoms that I had had. This was a kid who was very active in school and sports, and suddenly she started getting really sick. On a very direct level, it hit me again and it was really overwhelming. It was difficult for me when I went back to work after being ill and had to professionally interact with insurance carriers. When I told them where I had been, their response was that CFS is a nonsense diagnosis.

You might expect that response in early 1990s. But I recently attended a seminar with colleagues of mine who litigate these disability cases. The medical director from Prudential got up and said, "Please don't waste your time representing people with CFS. It's based on junk science." I got up, laid out some of my credentials, and said, "How dare you get up in a public forum and dismiss this condition."

The reality that it brought home to me was that this woman had no hesitation in a public forum making that kind of remark. That means that we've got a lot of work to do when the medical director of Prudential can get up and make such a remark to an audience consisting of lawyers who represent CFS patients, and those lawyers remain silent. Trust me, many of my colleagues to do not believe in this illness. They take the cases because it brings home the bacon, but they don't believe in CFS. I get calls from attorneys routinely asking how to approach a CFS case and then laughing half the time. When I say that I had it, they reply, "Oh, Barb, they never got to what you had."

I was thrilled to see that pediatric definition of CFS. The only way this illness is going to be legitimized is by the Federal government expanding beyond these little areas of research. We really need to get serious about it, and the Federal government needs to. One of the things that I propose is that perhaps CFSAC can invite some *ex officio* representation from the Department of Education (ED). ED has two offices that I think would be instrumental in helping the committee—Special Education on a program level, and the Office of Civil Rights, which is the enforcement mechanism for Section 504 of the Federal Rehabilitation Act. They could speak about what ED can do to educate school districts.

Part of this issue is that you are dealing with a problem that is local. In Australia, obviously there's a lot more centralization of this. In the United States what we're dealing with are local school districts. They are the ones who make the call on whether or not a child is protected under IDEA. They are the ones that decide whether or not they are going to buy a report from a physician who says that a child has CFS and needs accommodations and services. IDEA is a funding statute that funds with grants. But money is in short supply. You have a lot of people competing for that same pie.

We've got to look at a way to not only educate physicians better, but to incorporate the pediatric case definition into literature that school districts see routinely. The more that people see things, the more real it becomes to them. The more they see the Federal government seal on it, the more important it seems to them. CFSAC could recommend developing a Federal physicians' manual like the one that was done in New Jersey to be distributed on a mass basis to schools around the United States. There are enforcement tools in place, but things have to change at an attitude level. You're talking about really needing to expand the scope of how many people are educated about this. The only way that this can be done, in my opinion, is on a Federal level.

Ms. Comerford cited the case of Blair Hornstein New Jersey who was very sick with CFS. Her father, who was a judge, worked to see that she was protected in every way possible. He worked closely with the school district to develop an effective Individual Education Plan (IEP), and Blair graduated from high school as class valedictorian. The other parents threatened to file suit unless their children were named co-valedictorians, contending that Blair's accommodations gave her an unfair advantage.

The Hornsteins filed for a Federal restraining order based on Section 504, arguing that if their child is disabled and if she was accommodated because she satisfied the statutory criteria, then the school would be violating the statute to challenge the accommodations she received. The Federal district court agreed that a child cannot be punished for accommodations by classifying those accommodations as an unfair advantage.

Ms. Comerford: If you have an effective IEP in place, CFS patients can do well, and they feel better about themselves. These kids feel isolated because they can't perform at the same level. There's a lot of jealousy at this age between kids. Those without CFS say, "Why do I have to go to school? I'm tired too." If you educate the educators you can essentially count on them to educate the rest of the population. When parents

of children who don't have CFS complain, there's a school administrator there who can say, "This is a real illness and here is what they have." When we're finally successful at educating the public about this illness in a broad way, you will see more effective IEPs.

There are going to be parents in disadvantaged communities who don't understand that their kids have CFS and think that their kids are just malingering. The parents may be bringing their children to clinics where the staff doesn't think that the children are physically sick. It's difficult enough for parents with means who can fight for their kids in a substantial way. You take kids who don't have that support system, and you're really abandoning them. They're sick, but they don't have people advocating for them.

Dr. Hartz: Have you seen a model for this type of education?

Ms. Comerford: I'm not aware of any, but that doesn't mean that they don't exist. I do a tremendous amount of work for the national MS Society. You don't see this kind of response to people with MS, cancer, or any of the other primary illnesses. The schools bend over backwards to do things for them. It is really an issue of respect for the diagnosis of CFS and that is a serious problem.

Dr. Klimas: Is there anything that you can envision that CFSAC could accomplish under our jurisdiction that would make a difference for young people—perhaps some language that would influence DE or the SSA? There are only a few people with access to knowledgeable doctors. Dr. Rowe has gotten what she has gotten for kids through blood, sweat, and tears, one IEP at a time.

Ms. Comerford: Children and adults who are felled with the illness get evaluated under 99 2p by SSA. Doctors have to be there who understand this illness, then they've got to advocate for these kids. Then you get the effective IEP.

Ms. Healy: The gap created by not having biomarkers can be filled in by the Feds because of the authority. If every department embraced with enthusiasm recognizing the illness and providing supportive care, it would be enormously helpful, and that is something that we could do without biomarkers, starting right now. The word of authority that comes from Federal agencies might help with that gap. We shouldn't have to wait for those biomarkers to do that.

Dr. Snell: We have the mechanisms in place in the IEP process to recognize that CFS is a disabling condition, and that makes any child diagnosed with CFS as eligible for special services under IDEA. So first of all, the child has to get a diagnosis or somebody in the school has got to notice that there is a problem and recommend that the child be assessed. But even if you get that through, it doesn't end there, because the problem comes down to money and the school. It does not mean that the IEP is going to be implemented.

Ms. Comerford: The majority of the cases that are funded are learning disability cases. That's an acknowledged and accepted diagnosis.

Dr. Snell: It's the kids with advocates who get the money spent on them. The kids without advocates get lost in the mist irrespective of if they're CFS or anything else.

Ms. Comerford: Those kids who may be going to a clinic as opposed to a private physician—what do you think is going to happen to those kids? And what do you think is going to happen to those kids in an urban community who perhaps have parents who are working two jobs and don't have time to see some of these things? The parents are going to yell at the kid. I get those calls all of the time from those types of parents and I say hey, wait a minute. Let's get this kid checked out. But if their aren't doctors around to see those kids in a clinic because there aren't centers of excellence and there aren't places where people can go for that first contact with somebody who knows about the illness, the kids are going to be out of luck and they're going to be underreported, too.

Ms. Artman: I just want to point out to anyone on the Education Subcommittee who doesn't know this that there is a School Nurse Association. The Education Subcommittee might consider ways of contacting that association via DHHS to find out when their meetings are and whether they can participate to educate school nurses about this illness. We could also send a letter to any nursing associations that include school nurses stating that there is a repetitive issue that has been coming up for a number of years. I'm not seeing a fix; I'm hearing the same problem.

Ms. Comerford: Several years ago, school nurses weren't even a part of the multi-disciplinary approach because they weren't seen to be a valid connector with kids and part of the multi-disciplinary team along with teachers, school guidance counselors, and administrators. In New Jersey, school nurses are a part of it all of the time, and Drs. Jim Oleske and John Sterling routinely address school nurse associations and write about the importance of putting these nurses on the multi-disciplinary team and educating them about CFS.

Ms. Healy: Have you had any experience in New Jersey with school-based clinics and have you thought about that mechanism as a way to help the families that are affected? In Chicago there are quite a few high schools and even some grade schools that have school-based clinics that children and families in the school have access to after hours, on weekends, and in the summers.

Ms. Comerford: I'm not aware of any in my area. The clinics that I'm aware of are hospital-affiliated. That's challenging in and of itself to convince young physicians in a clinic setting that this is what this young kid might have.

Dr. Bateman: I just want to comment about my clinical experience with kids and trying to deal with them in the school system. It ranges tremendously even in my local area as to what kind of response I get from the school system. In some cases, the parents just pull their kids out of school and take care of it on their own. I've had patients referred to the alternative school, which is for kids who have had legal problems or drug problems. This is offered as the only option for kids with CFS who want to finish their high school

education. At the other end of the spectrum are kids who are allowed to stay enrolled, attend school as much as possible, and take their work home. It really depends on the motivation of the parents, how many resources the family has, and attitudes of the school district and the teachers. I've had occasions to do in-service training with the counselors and teachers, and that makes a huge difference. That's where maybe talking to DE would be helpful, because it's really not systemic. It's really unpredictable what I'm going to run into.

Dr. Klimas: If we could talk for a minute about the tragedy that is the misdiagnosis of Munchausen by proxy. It's probably the most devastating thing that can happen to a family ever. I've had this happen on at least four occasions in my patient population. Usually I'm called in after the fact. Here's the most demonstrative case:

A young black kid in a lower middle class neighborhood living with his mother and his grandmother was being cared for in recurring urgent care and emergency room (ER) settings because the family had no health insurance. The kid developed a thick medical file. On one occasion, he waited 14 hours in the ER to be seen. The family eventually gave up and went home. Someone reviewed the files and thought that it was odd that someone would go home without seeing the doctor after a 14 hour wait. The thick file prompted an investigation and an accusation of child abuse.

The mother was arrested. The police handcuffed the 10 year-old boy and took him off to a group home where he was forced to do calisthenics every morning at 7 am before school as part of his treatment program. I saw this child four months into this horror with a guardian social worker watching every word because the mother was there and she was considered someone who had to be watched closely. I got that child a primary care doctor for the first time in his life. He was in the group facility for 10 months before being returned to his mother, and she had supervised care for another year. As soon as they cut her loose, she moved from the state. She's living in California and the boy is doing better, but not without being subject to horrible trauma.

In this instance, it was the healthcare system that twice identified the parent as the problem. It was the school system that had that child removed from his home as a victim of Munchausen by proxy. So when you're trying to solve the problem school by school and doctor by doctor, it's beyond challenging. We need something with government authority, like the tablets down from the hill saying that there is such a thing as CFS in children and that it can be very disabling. We need something that we can point to.

Ms. Comerford: Let me also just pitch something. Dr. Ken Friedman, who's in the audience and a former member of your committee, is almost done putting together "The ABCs of CFS" for our state, and I think it would be wonderful if that could be distributed nationwide to states so that they're aware of this illness. It basically distinguishes between CFS and other things. It's horrible enough that these families are going through CFS. When you add this type of trauma on top of it, it's criminal.

Dr. Klimas: What do you think of bringing DE here as an *ex officio*? I know that they were invited and they didn't choose to come.

Dr. Parekh: I think that it would be best to first contact these various offices and ask them to either speak at a subcommittee meeting or speak at the next CFSAC meeting to find out exactly what roles they play and what roles they could play. At that time, CFSAC could think of adding them. I do want to ask Dr. Rowe and Barbara what success you have had in trying to raise awareness in the education community.

Dr. Rowe: I spent a lot of time, particularly with visiting teachers, and did a lot of in-service training and communicating with them directly. I got to know all of them personally and that made a big difference. They then acted as good liaisons with the schools. Ten percent of my referrals are from the school system, so they are recognizing, often before the parents, that these young people have a problem that needs some help.

It doesn't necessarily cost the schools a lot. I think that they hear "disability" and think dollar signs. Once there's a program organized for the young person, particularly if he or she goes for subjects rather than for chunks of time, the schools relax enormously because it means that the student is expected to attend the classes that they've selected. The teachers don't have to try to keep up with the classes that the students are not enrolled for. The pressure goes right off everybody with this communication because teachers like to talk, they don't like to write things down. Also, having to write things down for young people is a problem.

Schools usually cope well with students attending a few particular classes so long as there's a piece of paper showing which classes the child is going to attend. That gets schools off the hook with the authorities, it means that schools can cope much more appropriately, and it doesn't cost them anything, really. It's not like they have to apply for disability funds for looking after this young person. They just have to adapt their own program.

Ms. Comerford: The problem is, that's not often how school administrators look at these things. They look to see if you're going for services and accommodations, such as a tape recorder, that will cost money. It sounds ridiculous, but if administrators have to spend on things that are not ordinarily included in their budget—if they have to budget for an aide to help a person with CFS walk around—these are the kinds of things they balk at.

I was asked to assess a school for ADA compliance. It was a government building that had just been built. They asked me to come in after the fact because they were getting complaints. They were not in compliance with several things. The CFS kid couldn't get from one floor to another. She did not want to have to do all of her school work at home. She wanted to be at school, but she couldn't walk from one floor to the other where her classes were, and the school didn't want to accommodate her. A lot of these school administrators are just petty. You can create IEPs that are not costly, but I'm

talking about the attitude that you may confront as opposed to the reality of what has to be done.

In New Jersey we happen to have a wonderful CFS Association. You have people like Ken Friedman writing "The ABCs of CFS" and papers on the new pediatric guidelines getting the word out there. You've got Betty McConnell, who's dedicated her life to CFS in adolescents. So in New Jersey, because of the hard work of a whole host of people, we've got school nurses involved on a really meaningful level. We've got respected physicians spreading the word in the tri-state area. It's less of an egregious issue in New Jersey. I get less of these calls now than I did a few years back from people who say, "They don't believe me." I'm sure that's not true for areas outside our area.

Dr. Jason: In many ways, this is a remarkable exchange we're having now. We're hearing about efforts in New Jersey to really bring about some system change over time with a committed group of people. In Australia, we're hearing about using confirmatory factor analysis as opposed to consensus to identify symptoms that seem to be critical to the syndrome as well as a treatment program that seems to have remarkable outcomes. It just seems like we have a terrible problem, I would say approaching a crisis, in terms of how kids are getting victimized when they don't have someone like a Nancy Klimas to be an advocate for them. I get these types of phone calls too from people in very compromised situations.

I guess the question really is, what can we do? How do we move things forward? We have such influential people around this table and in our audience. Can the CDC begin to looking at pediatric issues using younger subjects in its studies? Can NIH bring pediatric issues into their thinking about a treatment conference? The DE isn't here, but we have agencies within NIH—the National Institute of Child Health and Human Development has a disabilities group. I think that their rep is one of the people on the Trans Working Group. There may be other things that HRSA could do. We've had such excellent suggestion of the types of education and provider training that are needed. The types of things that have happened in New Jersey and Australia—how do we get those things mobilized for a larger impact in this country? I think that's the next step, and that's our challenge.

Dr. Klimas: Might one use the school clinics that HRSA is sponsoring as a model project to identify and help coordinate the social and other types of care that these patients require? How many HRSA school clinics might there be and could we envision a project that we could put into place in those clinics as a model and then grow them from there?

Dr. Willis-Fillinger: HRSA does fund clinics, but I don't know if they're funded separately as school-based clinics anymore. They used to be. But yes, there is an infrastructure in place that is funded by HRSA. Whether or not they are currently being directly funded, I'm not sure. In terms of demonstration projects, research is not something that we traditionally do, so I'm not sure how that would be framed. They have been involved in projects, for example, if there was a fair amount of training

associated with it—training of school nurses and parents to come together and agree on protocols that they were able to develop together. But that was done clinic-by-clinic for the most part. I certainly will take your idea back and consider it.

Dr. Hanna: I want to raise something that may very well be controversial. I don't know how effective it would be for CFS and I certainly don't mean to add work for the CDC, but I don't think that dealing with these issues on a national level from top down is really going to get you where you want to go. I think you're talking about a state level initiative to put something good in place. Eventually other people in this country will recognize it and try to pull it together.

As I've said before, I come out of alcohol in Massachusetts and worked very closely with the state Department of Public Health from the time that they decriminalized alcoholism and started treating it as a health problem. I worked very closely with the state agencies, and we developed many things that actually lead to the eventual foundation of the National Institute on Alcoholism. That's where this gets put together. I think that if you could work with your public health agencies around these issues and bring in the different clinics that they supervise, maybe something can happen.

Dr. Miller: That would be a good suggestion. In fact, there are a number of state level agencies that could have quite a significant impact: the American Public Health Association, the Association of Public Health Laboratories, the Council of State and Territorial Epidemiologists, and a number of other organizations that do play a huge role in local public health that rises to a to national level, including case definitions and particularly case definitions of infectious diseases. Who's to say that if there could be an interest generated in those groups that this would not also rise to that level of national importance?

Dr. Parekh closed the roundtable session by noting that the discussion provided considerable food for thought, particularly for the Education and Quality of Life Subcommittees. He said that pediatric/adolescent CFS is a subject that CFSAC has talked about from time to time in bits and pieces but would really like to focus on more in the future.

[Dr. Parekh called for a 10-minute break.]

Public Comments

Dr. Parekh explained that the CFSAC meeting will include a public comment session each day. Those who speak registered ahead of time with CFSAC meeting facilitator Olga Nelson and appear on a first-come, first-served basis.

Deborah F., *New Jersey*

Dr. Kenneth Friedman is my dad. He began his career all over again when I got sick in 1992. I was a competitive swimmer and runner, a national merit scholar, and I managed to complete a BS in mechanical engineering in six years even after getting sick. I got mono my freshman year in college, first semester, second month. It was Halloween, and I never got better. I'm managing to work, and I actually am a rocket scientist. I was just appointed to a position as a senior analyst at Johns Hopkins University applied physics lab. I'll be working in their national security analysis department doing force-on-force war gaming and analyzing ballistic missile defense, particularly the C-based system. I've worked on C-based missile defense for the past 10 years at Lockheed Martin and was responsible for the study on the SM-3 satellite shoot-down.

I have done all of this with CFS, FM, and sleep apnea. Not easy. Nobody believes me. It's still true. Nobody believes me. I shouldn't have trouble getting keys to elevators in buildings I work in because I can't walk up the stairs. I shouldn't have trouble with handicapped parking; I still have trouble with that. Migraines, fluorescent lights, horrible work conditions, mold. In my last job, the computer room was underneath the combat information center; the analysis room, five decks up on an Aegis destroyer. That's all ladders people, those aren't stairs. Physically demanding. I'm in a huge amount of pain. In fact I just had to worry about disclosure of pain meds on my pre-employment drug test for Hopkins.

I am a miracle. I am a miracle of persistence, stubbornness, incredible parenting, incredible activism, and in my case, Valtrex. I have chronic Epstein Barr, which in theory doesn't exist, or the doctors keep telling me it doesn't exist. I'll tell you what—it feels like mono, it looks like mono, it keeps happening over and over again. What I really wanted to say is that we're not lazy people. We want to work; I want to work. You don't sit on a ship in the middle of the Pacific for three weeks on end if you don't want to work.

But we need some accommodations in the workplace. We need access to healthcare, and we'd really like to know what's wrong. In my case, I've got some bugs. We don't particularly know which bugs. I know Epstein Barr is one of the bugs. If anti-viral works then I think there's probably virus involved. We need to do some vector research. We need this to be recognized. Yes, if we find a vector it will be much easier for it to be recognized as a disease. There's probably more than one vector. I know a lot of Epstein Barr people, but I know people who are post flu, who are post other illness, and post trauma. It took me three years to get a diagnosis with a medical school professor as a parent.

Yes, I was 17 and "that doesn't happen to 17 year-olds" was the line at the time. All of the stuff we heard earlier about adolescents is very true. Nobody wants to hear that when you're 17. But I went from running five miles a day and swimming two miles a day—I did some triathlons, I did some sprint triathlons—to maybe I'll get to shower once

in three days. At the worst of it, I didn't shower. I was too sick to shower. I sat in the bathtub and my mom washed my hair. There were times at this last job where I went in sweat pants and a pony tail and prayed that no one looked at me, but I still got all my coding done because that's what they were getting. They were getting sweat pants and slip on shoes or nothing.

It's very, very common for me to have to make a choice between putting on a bra and taking a shower, or eating breakfast and taking a shower. Either/or. You don't get both. Grocery shopping is a three day project. You go one day, and that involves picking things up and putting them in a cart. Then maybe the next day, you can unload the car. And then maybe the day after that you can put stuff away. You don't get to do it all in one shot. These are daily functional things that we can't do. I think that when we talk about severity and the numbers that you saw up there on those charts, they need to be correlated to impact on daily function. That's what disability is about, and that's what we need to accommodate. No, I can't go up that flight of stairs. You really need to put me in a building with an elevator. It's not hard. Or put my office on the first floor.

The cognitive loss is pretty severe. I'm still doing a high-powered job. I'm doing a great job at it. I love what I do; I passionately love the physics and math. Smart kid, but it's not what it was and there aren't good measures of that. I've redone IQ testing, but because I was a high performer and I'm still a high performer, they don't see anything. I can tell you that it's 30 points less than it was. That's what it feels like to me. That's not even counting where are my shoes and my keys?

The main points that I wanted to make are:

- We need to figure out what's going on and keep the research going. It's really exciting to hear that we're finding things, finally.
- We're not lazy people and we want to be working.

Thanks.

Marion L., *Washington, DC*
Accompanying Documents: *Testimony to the DHHS Chronic Fatigue Syndrome Advisory Committee;*
Hypothesis: Chronic fatigue syndrome is cause by dysregulation of hydrogen sulfide metabolism

Good afternoon members of the CFSAC Committee and concerned members of the CFS community. My daughter's world, and by extension our family's life, were turned upside down four and a half years ago when our daughter, a beautiful 18 year-old who had been president of her class, was an athlete, and had a bright future ahead of her came down with what was then an unspecified virus, and was later diagnosed with the absurdly named disease "chronic fatigue syndrome."

For 10 years prior to her getting sick, I had on the table in the living room this little artist's book called *The Blind Men and the Elephant*. In the well-known parable, one blind man touches the elephant's side and is certain he is touching a wall. The second blind man grabs a tusk and is certain he is holding a spear. The third touches a squirming trunk and thinks it is a snake, and so on.

I cherished this book because it so simply and elegantly illustrated how our conceptual framework—our view of a problem—can limit our ability to see and understand the larger whole, particularly when combined with unwarranted certainty. It reminded me of the importance of thinking more broadly about a problem and maintaining an open mind, something that I, in turn, will ask of you here today as I discuss a hypothesis I have developed on the cause of CFS/ME.

I have been working in a new, very promising area of research akin to the discovery of nitric oxide in its importance, for which the Nobel Prize was awarded. Very few scientists or physicians are familiar with it. I should add that I am not looking for any research money, but instead I am talking about this in the hope that I will be able to interest other researchers to take it up. I could not have gotten to this point without the support of Dr. Carl Peck, a former Assistant Surgeon General and director of the FDA in drug development, who early on felt that I had made a discovery and guided me through the process of writing the hypothesis, which was e-published in September ahead of print by the *Journal of Medical Hypotheses*, which you should have in front of you.

To the idea: Almost two years ago to the day I attended a lecture by a scientist who was able to induce a state of suspended hibernation in mice using the gas hydrogen sulfide, or H2S. As I listened to him, I was struck by the similarities between what happened to the mice—a decrease in core body temperature, an apnea-like sleep state, reduced heart and respiration rates, and a severe metabolic drop—and the symptoms of people with CFS/ME.

Out of that idea grew my hypothesis that CFS/ME is caused by dysregulation of hydrogen sulfide metabolism. Further, I postulate that the multi-system disturbances in the homeostasis of endogenous H2S result in mitochondrial dysfunction.

Research on H2S—the gas that causes the characteristic smell of rotten eggs—dates to the 1700's. At high concentrations, it is instantaneously deadly, on a par with cyanide. At low concentrations, some evidence exists that H2S has beneficial effects and can act as an endogenous biological mediator. In fact, the brain, pancreas, and gastrointestinal tract produce H2S. Endogenous H2S plays a role in regulating blood pressure, body temperature, vascular smooth muscle, cardiac function, cerebral ischemia, and in modulating the hypothalamus/pituitary/adrenal axis. It has even been called a master metabolic regulator.

We refer to CFS/ME as a systemic disease, but no unifying thread has been found. The fact that H2S directly affects the neurologic, endocrine, and immunologic systems—the very systems most affected by CFS/ME—has not been explored.

In persons with CFS/ME, one plausible etiology is an increase in the activity of endogenous H2S, which thereby inhibits mitochondrial oxygen utilization. In this view, fatigue and other symptoms could be due to diminished physiological and cellular energy due to reduction in the capacity of mitochondria to utilize energy. Specifically, H2S binds to the mitochondrial enzyme cytochrome c oxidase, which is part of Complex IV of the electron transport chain, and attenuates oxidative phosphorylation and ATP [adenosine triphosphate] production.

Consistent with this finding, recent research on low level H2S toxicity points to increased formation of free radicals and depolarization of the mitochondrial membrane, a condition that would decrease ATP synthesis. If poisoning renders mitochondria inefficient, one would expect cells to shift to anaerobic mechanisms, a shift that has been reported in CFS patients. Consistent with this hypothesis is the fact that mitochondria are organelles descended from ancient eukaryotic sulfer-utilizing microbes. Thus it is not surprising—and this is important—that mitochondria show a very high affinity for sulfide. In other words, they have retained the ancient capability of using this gas.

Given a predisposing genetic background, H2S may lead to genomic instability or cumulative mutations in the mitochondrial DNA. I would hope that you would read the rest of the details.

New discoveries on H2S are being made every day. I would encourage you to go to PubMed or Google and type in your area of research and "H2S." If you are interested in cardiac function, you will find last week's article in *Science Daily* about Johns Hopkins' Solomon Snyder's finding that H2S controls blood pressure. If you are interested in catecholamines, you can read about the inhibitory action of H2S donors on nor epinephrine. If you are interested in immune function, you will find that exogenous hydrogen sulfide induces functional inhibition and cell death of cytotoxic lymphocyte subsets of CD8 (+) T cells and natural killer cells. If you are prescribing vitamin B-12 to your patients, you will see evidence supporting hydroxocobalamin as an antidote against H2S poisoning, and so on.

I think it's important to point out that H2S plays a pivotal role in both aerobic and non-aerobic organisms as a signaling molecule. Bacteria in the gut produce H2S and utilize it as a substrate alternative to oxygen. This is of particular relevance in the GI tract where unusually high levels of gram-negative bacteria, which increase intestinal permeability, have been found in patients CFS/ME. In addition to bacteria, many of the foods and substances people are sensitive to such as mold, milk, eggs, wine, corn syrup, and the ever ubiquitous yeast produce hydrogen sulfide.

My hypothesis does not address the fact that H2S is increasing in the environment as a result of global warming, natural gas and crude oil refining, centralized animal feeding operations, and chemical processes. It seems logical, though, that the external levels could affect internal levels just as oxygen does.

In summary, I ask you to keep an open mind and to support this idea. I could give you ideas as to how I would design a research program if you're interested. Thank you.

Kim M., President and CEO, *CFIDS Association of America*
Accompanying Document: *Testimony to the DHHS Chronic Fatigue Syndrome Advisory Committee*

Good afternoon. Most of you know me. For 18 years I have served as the chief staff executive of the nation's largest and most active organization dedicated to conquering CFS, the CFIDS Association of America. I had hoped today to come to share with you ideas about strengthening public/private partnerships to advance CFS research and education based on successes for other complex health issues.

However, I feel I must spend my time before the committee today to inform you about a situation of deepening and widening concern to all of us at the CFIDS Association, including my colleague Dr. Suzanne Vernon, a former CDC staff scientist. I regret that this testimony is necessary because we have been here before in this very room to talk about the same thing.

And in spite of my calm demeanor, I am outraged that again we are forced to confront serious funding issues at CDC just as we were 10 years ago in April 1998. At that time, it was Bill Reeves who took the courageous step to provide evidence of funding irregularities in the CDC's CFS program. A year later, the Inspector General confirmed that $12 million was reported to Congress as CFS expenditures when the money was actually spent on other programs between 1995 and 1998. Now, unfortunately, it is Dr. Reeves at the center of these problems with the CFS program. The headlines on these *Chronicles* seem oddly familiar; only my hairstyle has changed.

Based on information that we have received directly from CDC officials—and I do have to thank Mike and Sara and Steve for the improved transparency over the last five months—and also available on public information sites, the "boom" of CDC research that occurred during the post "payback" years from 1999-2005 has eroded into what I believe is a "bust" of shameful scientific leadership, zero accountability, invisible outcomes, and millions and millions of dollars stuck in suspended animation, if not wasted. At least in 1998 science was being conducted that would aid discoveries in other diseases. This time, only government contractors seem to be benefiting from millions spent for which there are no worthwhile outcomes for American taxpayers or CFS patients.

Please allow me to share an analysis of the data we have compiled. I understand that you have received copies of this in your notebooks. This is the same information that I have in addition to some searching I have done on public websites.

You're all familiar with the infamous "Bridge to Nowhere." Let me introduce you to what I call the "Research to Nowhere."

In 2004, CDC began funding a new series of contracts with Abt Associates, a for-profit business and research consulting firm with gross revenues of $225 million. CDC's CFS research program has contracted with Abt every year since 1989, from what I've been able to find, with most contracts being sole source awards. On September 1, 2004 (29 days before the end of the fiscal year), CDC obligated $632,000 to pay Abt to "conduct field operations for follow-ups of persons with CFS, chronic unwellness and well [sic] that were identified during baseline surveillance" in Georgia, about which Dr. Reeves presented regular updates to this committee. These studies were designed to "measure the clinical course of CFS, evaluate changes in population morbidity and evaluate the economic impact of CFS."

Funds were again obligated to this same contract in August of 2005, August of 2006, early September 2007, and August 18, 2008, just a few weeks ago. The total allocated to this contract so far is more than $3 million, although only $1.5 million has been spent. That's less than the first two years' obligations alone. So $1.6 million directed to this contract have essentially been stuck in limbo since 2007, signaling a lack of strategic direction, accountability, and performance by both CDC management and the contractor. Information provided by Sarah Wiley indicates that CDC anticipates needing to spend more money on this contract, but they do not know how much more or over what time period the expenditures will continue.

You may recall that this study utilizes the "empiric" definition of CFS about which many of you raised concerns this morning and on other occasions out of concern that the empiric definition is broader than the 1994 definition. So far there have been just three papers published as a result of this study that has consumed $3.2 million of CDC's programmatic budget.

This is not the only Abt study that was funded in the same time period. On August 20, 2005, CDC entered into another task order with Abt to "assess logistics inherent in identifying, contacting, and enrolling subjects into a CFS registry." The first obligation was for $1.4 million. On August 2006 and September 2007, several additional obligations increased that amount to $2.2 million. These funds covered protocol development, development of a statement of work, submission of approvals staging focus groups, and further revising a statement of work and OMB package—paperwork. The OMB package was not even submitted until 2007 and was not approved until August 2008.

The information that we got from Steve Monroe this morning is that they've enrolled just one patient in the three years since funding began. Again, the CDC anticipates having to spend more money, while at the same time they've spent less than a million dollars of the money they already have, leaving another $1.1 million in limbo. And you've heard Dr. Reeves say on many occasions that he has no new money to do collaborations or other new projects.

The third project is the clinical study being conducted in collaboration with Emory University for which Dr. Monroe provided an update today. This also involves Abt. The Abt portion alone, begun on September 13, 2005 with an obligation of $1.2 million, continued with additional obligations in September 2007 and August 2008 for a combined total of $2.6 million. This sum has paid for Abt to provide logistical services to help enroll patients at the clinical research center. Emory has also been paid a total of $1.8 million. So combined funding for Emory GCRC and Abt is $4.48 million. $800,000 of the amount given to Abt has not been spent, and these funds don't even include the support that NIH provides through the GCRC facility itself.

This study, in contrast to what Dr. Monroe's slides said this morning, will only examine 30 CFS patients and 60 healthy controls, so that comes at a cost of $149,000 per CFS subject studied. I'm sure all of the investigators around the table would love to have $150,000 to work up their patients. The group at Emory is also a group that's under close investigation because the department chairman, Dr. Charles Nemeroff, has been under investigation by Sen. Grassley for accepting pharmaceutical company payments without disclosing them.

The reason that I provide the dates on which these obligations are made is because it shows a pattern of "use it or lose it" spending occurring in the very final weeks of each fiscal year. I think that underscores the fact that the strategic plan is lacking. It's an issue that you all articulated in May, and given the fact that CDC will have a peer review next week that is largely the basis by which they will determine further research endeavors and a strategic plan, I hope that you will choose to do as you did the last time—and I urge you to do so for the benefit of the patients who are here today and those who wish to be here but can't be here—that you send another vote of strong no-confidence in leadership of this program based on these spending irregularities, the waste of the funds that have been allocated to these projects that have not been spent, and the lack of productivity of the dollars that have been spent.

Thank you for indulging my ire this afternoon.

Ms. Artman: Given Kim's testimony, is there anything the committee can recommend that will protect the CFIDS Association from retaliation? I guess I'm interested in the politics of it. Of making sure that given what Kim said, which is very damaging to CDC, that it doesn't turn into something damaging to the CFIDS Association.

Dr. Miller: We've met with Kim before on this and we do know her concerns and I do hope that some of those concerns will be allayed at this next peer review, but it would not be to our advantage or anybody's advantage to respond negatively or to have any type of retaliation. That's certainly not a scientific approach. It's not an issue that we're interested in, in terms of retaliation.

Suzanne V., Scientific Director, *CFIDS Association of America*

Accompanying Document: ***Testimony to the DHHS Chronic Fatigue Syndrome Advisory Committee***

I would like to provide perhaps a framework and some solutions for us to move forward when it comes to things that the advisory committee can do and the Research Subcommittee can do. It starts with data sharing. Data sharing is required in most academic research, but it is not ubiquitous. Most funding agencies, institutions, and publication venues have policies regarding data sharing because transparency and openness are considered by many to be an important part of the scientific method. A number of professional organizations are leading the way on data sharing, including NIH and the National Science Foundation.

Despite policies on data sharing and archiving, withholding of data still occurs. Authors may fail to archive data for public access, or they only archive a portion of the data set. Failure to archive data is not the only manner of withholding data. When a researcher requests additional information about study data reported at a scientific conference or publication, authors sometimes refuse to provide it. When authors withhold data like this, they run the risk of losing the trust of the scientific community.

There is Federal law for data sharing. On August 9, 2007, President Bush signed the America COMPETES Act (or the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act), and it requires civilian Federal agencies to provide guidelines, policy, and procedures to facilitate and optimize the open exchange of data and research between agencies, the public, and policymakers.

NIH and CDC have data sharing policies in place. I'll quote from the NIH statement on the NIH Office of Extramural Research website. February 26, 2003 was when they made their notice of their data sharing policy: "NIH reaffirms its support for the concept of data sharing. We believe that data sharing is essential for expedited translation of research results into knowledge, products, and procedures to improve human health. The NIH endorses the sharing of final research data to serve these and other important scientific goals. The NIH expects and supports the timely release and sharing of final research data from NIH-supported studies for use by other researchers.

NIH recognizes that the investigators who collect the data have a legitimate interest in benefiting from their investment of time and effort. We have therefore revised our definition of 'the timely release and sharing' to be no later than the acceptance for publication of the main findings from the final data set. NIH continues to expect that the initial investigators may benefit from first and continued use but not from prolonged exclusive use."

The CDC's policy is actually a little more comprehensive than this. Here's an excerpt from that policy: "CDC believes that public health and scientific advancement are best served when data are released to, or shared with, other public health agencies, academic researchers, and appropriate private researchers in an open, timely, and

appropriate way. The interests of the public—which include timely releases of data for further analysis—transcends whatever claim scientists may believe they have to ownership of data acquired or generated using Federal funds. Such data are, in fact, owned by the Federal government and thus belong to the citizens of the United States."

There are data sharing success stories. CDC approved the sharing of the CFS Wichita Clinical data set, which many of you are familiar with, with 25 intramural and extramural investigators in what we call the CFS Computation Challenge and also with CAMDA, which you heard in Steve's presentation this morning.

Over the past three years, sharing the Wichita data set and partnering with expert extramural scientists resulted in more than 20 publications, and there are more manuscripts delving into the data set currently as we speak. CDC's CFS Research Program has published about 15 papers on the Wichita Clinical study set in the past three years. So in addition to yielding more value for our money, this data sharing effort generated new perspectives on CFS and confirmed previous observations about neuroendocrine and immune dysfunction in CFS. So, more than 30 publications from sharing of one data set, and it actually could be increased.

What about the existing data that we actually have? The NIH has funded CFS research since 1988. The NIH CRISP [Computer Retrieval of Information on Scientific Projects] database was searched from 1988 to present for all projects listing CFS in the abstract or in the thesaurus. Seventy-five researchers have been funded to do CFS research. PubMed publications by these investigators accounts for 4250 publications; 900 of those are CFS-specific. CDC has conducted research since 1990. The CDC research program is in the Division of Viral and Rickettsial Diseases, Chronic Viral Diseases Branch headed by Dr. William Reeves since 1989. PubMed was searched for all CFS-relevant publications with Dr. Reeves as co-author, resulting in an estimated 50 publications with the first one published in 1992. The following table lists studies that have been conducted or funded—and I can send this—and basically I have 10 studies, each with the number of publications resulting from those studies. For example:

- Wichita Longitudinal was started in 1997; it has 25 publications.
- The National Survey was started in 2001; it has one publication.
- Wichita Clinical started in 2002; it has 25 studies.
- Interferon Alpha Induced Sickness, which is an Emory-contracted study, started in 2000; it has 11 studies.
- Dose response to CRH started in 2002; no publications.
- Impact Study of Recruitment, the Fort Bening Study, 2006; no publications.
- Georgia Survey started in 2004; three publications.

The solution? An enormous amount of data has been collected on CFS over the past 20 years. This is partially reflected in these CFS-specific articles that can be found in PubMed. However, we have not gotten the best value for the Federal dollars that have been invested in CFS research as shown by the lack of publications, measurable outcomes, and products from many studies.

There is a solution. We can gather and make publicly available the research data, and use readily available information technology approaches to better organize and understand the data that has been collected to date. This will allow us to establish a valid and evidence-based CFS knowledge base that can be used to direct further CFS research.

Further, there should be a required inventory of all specimens that have been collected by Federal agencies and Federally-funded investigators. These specimens should be deposited into a biorepository and managed accordingly.

The 20 years of information collated in the form of a CFS knowledge base would direct the overall objectives of a collaborative CFS research network. The ultimate goal of this network would be effective strategies for treatment and control by describing risk factors, identifying biomarkers, and elucidating CFA pathophysiology. There are many examples of how these exist. This solution is the best value for our taxpayer dollars dedicated to furthering CFS research and could be a model for the study of other complex conditions that impose such a burden on the individual, the community, and the nation. Thank you.

Toni M., *Maryland*

Thank you, Chairman Oleske and members of the Chronic Fatigue Syndrome Advisory Committee, for this opportunity to address issues of help and accommodation for those living with CFS.

My story is one of resistance and denial of disabling conditions. Looking back, I had something wrong since early childhood. My body became so overwhelmed over time, I ended up in a bad state of chronic fatigue syndrome. Since then, I have been diagnosed with postural orthostatic tachycardia syndrome, orthostatic intolerance (OI) , and more; much more. I also suffer neurally mediated hypotension, which I kind of figured out myself because I melt in humidity and temperatures over 70 degrees.

Once diagnosed with CFS in 1997, I found the CFIDS Association, thank God, who connected me to Elly Brosius, who is an extraordinary leader of the Northern Virginia chronic fatigue syndrome support group. I attended several conferences and leadership meetings, reading as much as I could, especially the Johns Hopkins CFS-OI studies which were really very helpful. I've educated myself the best I can. I have made my email and phone number available since 1999 to accept inquiries from people looking for information about and support for coping with CFS and related or overlapping conditions.

With time, and thanks to the Johns Hopkins studies, I came to understand why I feel so much better when I stay home rather than, say, seek a normal social life. I'm very outgoing and I really miss a normal social life, but I do feel better, and I like feeling

better more. Or I feel better when I stay home rather than show up at meetings like this one, but I make exceptions for special occasions like this one.

Counselors at the third vocational rehabilitation center to which I applied for help in 1999 had no doubt that I needed help at home. They advised me to let them help me apply for help around the house from the Federal Developmental Disabilities Agency. It took two years for DDA to find me qualified for help, but not money help. I was assigned a coordinator and placed on the Maryland State Waiting List Initiative, which is for people qualified for help for whom no help is available due to the great need of so many with far fewer resources than I.

My coordinator found helpers through her church for a couple of seasons—yard work, especially. Really, that's all they could manage, and I really did need help. I still do. She found a few other resources to help pay one-time bills. When she offered more helpers from her church a couple years later, I hesitated. Church people, like most people, work full time. They take time from home responsibilities and family to help others. They like you to show up at their church after they help.

After years of hiring organizers (six in all) and spending a fortune, and then someone local to help me clean dishes and things, I realized my needs were even greater and more ongoing than I could afford, more than I had ever imagined. My coordinator visited shortly after I had figured that out and ran out of money and realized that I needed more help and that I qualified for emergency help, and she found a way to provide it, but it took two more years.

I have and am grateful for help around my house for the last two years. My quality of life is enormously enhanced by regular dishwashing and trash removal, and washing of clothes occasionally. Luckily I have eight months worth of clothes so I don't have to wash very often. In addition, my life is enhanced by the particular qualities of my aid, whose annoying habits like leaving wet sponges in the kitchen sink and separating lids from matching containers, which drives me nuts, are completely overcome by her sense of humor and regular, sincerely offered hugs and friendship. She is a lovely woman and I'm really lucky to have had only one aide in the entire two years who lives really close and has a car. For example, on Thursdays she'll call me up and ask if I would like her to leave my recycling and trash out for Friday morning.

I talk to many people with CFS who have needs as great as or greater than my own and who have no help or little help or, as I once counted on, grudging help from family and friends. Everyone in my family works full time or has their own health problems—some very similar to mine, just not nearly as bad yet—or both. I stopped asking one friend for help when he said, "I don't know if you remember, but working people are very busy." I do remember working, and I was very busy.

It took years for me to get help around my house. Waiting for help was sometimes frustrating. But looking back, I was so in denial and so resistant to knowing how much help I needed, I think help arrived at exactly the right time for me.

Help is hard for people who fought like hell to keep their jobs, ignoring symptoms for years or, as in my case, for a lifetime, dismissing symptoms with offhand remarks to myself like, “I am so weird.” We may not be appreciative or grateful for help we take for granted nor for targeted help as I have been lucky to acquire. It takes years for CFS patients to realize how physically and cognitively limited we are in terms of normal activities of living.

As the nature of CFS becomes better understood by more professionals, more CFS patients may appreciate their physical and cognitive deficits—“may” is the operative word here. Don’t count on it. Education helps, knowledge helps, but you have to be ready to hear it. But taking limitations seriously can help you ask for help a little faster than I did. Help is hard as CFS people hold onto the idea of recovery any minute, as I did. When you can dress yourself and toilet yourself and do dishes occasionally and go out to dinner and go shopping—although not sit at a job without feeling horribly sick—when you have that going on in your life, the idea of recovery any minute is ever present…the idea that life will go back to what is normal for them—for me—before CFS was present.

Programs are severely needed that help CFS people and understand that their wishes for recovery and their up and down days are normal. We live and cope with CFS with difficulty, often struggling with symptoms for years or decades without diagnosis, as I did, without even physician support, as members of this committee know. Programs helping CFS patients cope with the nature of their conditions has the potential—the potential; don’t count on it—to short circuit patients’ denial and resistance, hastening acceptance, with which the best of us need help; helping us move toward healing.

Thank you very much.

Amy S., *Virginia*

For over 15 years I have worked with Federal and state governmental agencies to help them achieve their missions more effectively. I bring what I call a “good government perspective” about combating and conquering CFS. With a relatively new and still poorly understood illness such as CFS, the government should play a critical role to seed research to define the illness, understand the causes, understand the most effective treatment regimes, and align the broader health system to support those who suffer from it.

So then I ask myself, “What is my government doing? What kind of performance should I reasonably expect? How would I expect them to spend my tax dollars and serve the public?” I wouldn’t expect what I just heard. I took the numbers and citations from Kim McCleary’s testimony, and let me cut right through it. I did the math, and I’m going to boil it down or all of us:

Since 2005, the CDC has spent upwards of $11 million total to begin to study 30 patients and publish three papers. I'm going to repeat that: four years, $11 million to begin to study 30 patients and produce three papers. That's a lot of money for a lot of paperwork over a lot of time with a lot of opportunity costs. Please don't try to rationalize to me that it's more complicated than that because really, at the end of the day, it isn't. This is not good government, this is a farce. This is a betrayal, it is an absolute failure in leadership, and it is a violation of the public trust.

I have worked on government contracts for most of my career. I am mystified by the information reported about CDC's contract activity and the apparent lack of meaningful results for it. When I've worked on a government contract, I've been expected to perform and show results. When I worked on a government contract, I had to demonstrate superior results for the money the government had already obligated before earning the government's trust and confidence for further funding. Doesn't sound to me like CDC expects much of anything.

Of the $11 million allocated to CFS since 2005, several million are sitting in an account somewhere, apparently waiting for the contractor to bill against it.

The CFIDS Association has raised a million for CFS research. It's not a lot, but it's a million dollars, the biggest ever private effort. It hired a science director to head up a comprehensive research strategy. It solicited proposals for research and received over 20. Imagine that—in one year, a million dollars, a science director, and 20-some proposals promising very exciting research. Meanwhile, CDC has tied up $11 million for four years and gotten three papers. I think the comparison speaks for itself. I'd expect more from my government. I reasonably expect more for my taxpayer dollars and for bestowing upon the government the trust that we do.

Which brings me to you all. As I understand it, the CFS Advisory Committee's role is, among other things, to advise and make recommendations to the Secretary of Health and Human Services about CFS including the current state of knowledge and research. From where I sit, the current state of knowledge and research within HHS is pretty appalling. I believe you, the advisory committee, have your work cut out for you. I believe that you take your charge seriously and I would ask you to do so more assertively. I would encourage you to fully inform and fully advise the Secretary, particularly the incoming one, about the utter failings of the CDC's own research programs, about the gross mismanagement of the millions of taxpayer dollars, and about the complete abdication of responsibility to the taxpayer and to the CFS patient who rightfully expects leadership from his or her government—leadership that we have all paid for. We as taxpayers and as individuals who suffer from CFS deserve no less.

There's a lot of work to do to conquer CFS. We can do it if we step up to the challenge. This is America, remember. I hope my government will step up, because as of today, the track record is pretty poor, I'm losing faith, and millions of people are suffering the consequences of the agency's continued mismanagement of the precious few dollars that it has seen fit to bestow to explore this illness. Tick tock…I'm not feeling a sense of

urgency here. It's like we've got all the time in the world. We've got four million patients plus their families in this country whose lives are passing them by and I'm not getting any sense of urgency from the government to conquer CFS, to find out what the cause is, and to bring an end to this illness. Tick tock.

Thank you for giving me the opportunity to speak to you today.

Lars Ellen M., *Arizona*

I am 51 living in Tucson with my husband. I have CFS, OI, FM, allergies, Hashimoto's disease, pernicious anemia, fluctuating thyroid, ADHD for which I cannot use drugs because of memory loss side effects, sleep apnea, restless leg syndrome, and postural limb movement syndrome causing jerking and kicking the nonsense out of bedpost and darling husband.

Disability retirement from work was a result of a series of events culminating in five back surgeries beginning in 1999. I use two canes to walk short distances and I drive a little. Antibiotics are needed for the foreseeable future due to chronic MRSA [methicillin resistant Staphylococcus aureus] infection causing chronic digestive problems.

The foregoing feels like I could stand at a podium confessing an addition with its troubling behaviors and feel ashamed. Well, I guess I do have an addiction: I'm addicted to life and living as much as I can with my limitations. By speaking publicly, I wish for increased awareness and more help for the next person facing my challenges.

A little accommodation goes a long way toward helping people live well with chronic debilitating conditions. Most accommodations happen at home with family plus what we are willing to use in public like canes and handicapped parking. But what of people living alone with these conditions? Our little family has worked hard finding accommodation and means of living with disability. Every accommodation we have used enhanced not only my life, but my husband's and sons lives, benefiting everyone in our lives.

CFS patients need programs designed to help patients more easily find resources, tools, and alternatives to maneuver past the obstacles of disability, enabling patients to feel more part of life and the lives around them. It is as confusing for patients as for their families that some days we seem almost normal only to relapse into a heap the next day. This is serious stuff, and patients and their families benefit by knowing what to expect while we wait for research to help some more.

CFS means not knowing what to expect on a given day. Some days, things get done; some days, I may be so stove up that showering, bathing, changing clothes is out of the question. Dressing, especially to be out and about, is nothing like my former life. I have no more strength for pulling on pantyhose or stumbling in high heels. I dress in easy

access clothing and comfortable shoes. But there are days I crawl out of bed, rubber band my uncombed hair, and spend the entire day in pajamas.

Neurological symptoms cause brain fog and trouble holding onto instructions, directions, words, and names, including those of my two grown sons, like a game of charades or password. Shopping for a mattress, I gestured wildly with slurred speech, exclaiming, "I need bird…feather…not up…for top." The word I sought was "down" for a mattress pad stuffed with down feathers. B12 shots help, but after a shot a few days ago, writing this has taken several days—before editing.

My best friend and husband, Glenn, and I have set up our home for my ease of movement—more accessible kitchen and laundry, floors that won't trip me up and are softer to walk on. I need an indoor temperature of 66 degrees to deal with chronic temperature dysregulation. I wear long sleeves to hide bruises from stumbles and to keep me comfortable in my cooler than normal house.

People like me feel overwhelmed by things we must do much less fun things like travel. We feel almost forbidden to have fun once we no longer work. I have given this a lot of thought. I may not be able to do something I love just now, but working toward it over time may lead to doing things I love in the future while I also work toward healing.

I am pleased to have worked up to a decent level of strength in my legs over five years, allowing a trip to Europe recently. To maintain improved muscle strength, my husband found a cargo—or Miami—bike and jury-rigged it for increased stability. I experience fewer tremors and shaking while riding the bike. Zuzu, my eight year old high-energy greyhound dog, must be walked, but not by me. If I hook her leash to the Miami bike when I ride, she runs with me. Caesar Milan would be happy for us.

Sewing is a comfort for me. Before my disability, I once sewed 23 costumes in 28 days for a play. With adaptations, I continue to sew. Recently, my friends and I completed a sewing project for charity. I designed the clothes and supervised friends who sewed and fitted and checked measurements to prevent my cognitive difficulties from causing the loss of precious materials. The project took over four months resulting in a wonderful event.

As a CFS patient, I know to pace myself during a large project. I worked a little every day with regular breaks, lying down to deal with pain and fatigue. At project's end, I slept for three days straight. I take for granted I must plan for time for "crashing" and/or relapse after a large project or outing.

Our family stumbled our way toward lightness through help and accommodation of my disabling conditions. I hope our experiences help others find their way more quickly with the creation of widely accessible programs toward lightness of being, stumbling a little less than those of us who went before.

Dr. Parekh thanked members of the public for testifying and said that "it takes a lot of courage to come up here and provide your thoughts and opinions to the committee. The committee takes all of your thoughts very seriously, and you are certainly the center of this committee."

Committee Discussion

Dr. Parekh marked the end of the formal agenda and before adjourning the meeting, opened the discussion to CFSAC members' final thoughts.

Dr. Jason: All of the patient testimony has been riveting, as it has in the past, but particularly the largest patient organization in the country has brought up some issues that have prompted some follow-up questions that I'd like to ask Kim. We have time before adjournment.

Dr. Parekh: The committee is absolutely free to discuss any issue that it would like to. It would be appropriate to call Kim back to the table in order to ask her questions. [Kim agreed to do so.]

Dr. Jason: The issue that concerned me the most is the issue of the CFIDS Association being threatened with allegations and some type of retribution. I'd be interested in hearing more about that, if that is what you're alleging.

Ms. McCleary: I wanted to make the committee aware of that, that wasn't really the focus of what I had hoped to bring to your attention. I don't think there's really any role for the advisory committee in that particular issue.

Dr. Hartz: How did your concerns with the CDC begin? Were there some things that you noticed that seemed to be not operating well? With the numbers and the areas that you looked at, it seems like there would have been motivating factors that got you to start looking at those.

Ms. McCleary: As you know or may have noticed, I come to every single one of these meetings. I think I've missed only one public meeting in 18 years. So, I have made quite a study of what's going on with each of the agencies, how the programs are unfolding, how the studies are moving forward, and I do my best to keep close documentations of materials that are provided in these types of forums.

I also served on the blue ribbon panel that CDC convened at the beginning of last year and was given some information at that point. Drs. Bateman, Klimas, Hanna, and I were all on that panel together. We made a series of recommendations and expressed some concerns at that point about the direction and the pace of the research program that did not seem to be in proportion to the resources that were being spent, although we weren't asked to comment specifically on the resources.

Also, the CDC program was without a home and in the process of the reorganization. There was quite a lot of discussion about the lab issues versus outside collaboration and external studies, so we were looking closely at that.

As a contractor, we were asked to do certain things with regard to provider education. I've been asked by you to provide an update on that, and I'll just give you some of the outcomes, but it was our feeling that we were missing a return on investment—that the way the research group asked us to conduct those education activities, we were really missing the boat as to where the bulk of the need was among the provider audience.

We began registering our concerns over a year ago and as Dr. Miller pointed out, we've met on many occasions in person in Sen. [Jack] Reed's office and by telephone. We've gone over our concerns, and many of the issues that I raised this afternoon have been raised directly with CDC, so I don't come at them from behind. It's been a building issue that we tried to rectify internally with the research program first, and then with the leadership. Now we just felt that this was an issue that the advisory committee could help focus some attention on to try to get things back on track, because the need for this research program is obviously great.

The research group at CDC has the most money in all the world to study this illness. That's a sad fact in and of itself, that $5 million is the most money in the world being spent by one group of people. I think it was really the trip to Japan that Suzanne and I made in April where they have 20 percent of the budget, 10 times the number of people, and the science is amazing. It's not a lack of resources at CDC, it's a lack of leadership, and that's really what it boils down to. Hearing the concerns of this committee over the last year has reinforced that. We felt that it was important to bring that discussion to all of you this afternoon.

Dr. Klimas: I would hate to see this evaluation move into a crisis phase that would result in losing the CDC program. That would be just devastating to our field. The program represents half of research being done in the whole country in terms of expenditures. I hear what you're telling us, but God forbid the end result be that the program be dismantled. First, the basic science going on in the research group is just phenomenal. The laboratory strength is really good and they have the potential to be leading the whole world in the advances in this area. Please don't let the ball start rolling down the hill in a way that results in the program being dismantled. That would be a disaster.

Dr. Miller: First of all, this is my second meeting, and we all recognize the incredible value of this group and of the public attending these meetings and how important they are. I can assure you that we have no intention of dismantling this program. Everything we have is driven by resources and how those resources are spent. We have tried to be as transparent as possible. We have answered, I think, every question that CFIDS has asked of us. We've met with them. We clearly respect the work that they've done over the years and will continue to do. We really want to continue to be the team player that you expect.

While that obviously is not where people think it needs to be right now, I think we are doing good science. We have no scientific journals—at least that I'm aware of—that have dispelled the science that we have done. We all want to do more and we'd love to do it faster. I can't tell you that that's going to be solved tomorrow, but I can tell you that we are listening and we are trying and we are as much a team player with you as we can be right now.

Dr. Hartz: Do you feel that the CFIDS criticisms are valid; that there are some concerns about how this program is being administered?

Dr. Miller: We've talked with Kim before and we're aware of her concerns and she knows that we're aware of her concerns, so nobody's an enemy here. We all want the same goal. But the way that the money is handled with obligations and actual spending, etc., very often, as many of you know, we don't get our budgets until these few weeks before the end of the year. We have early cutoffs and things happen. I can't explain all of this at this meeting. We'd have to have other people to do that, but Sarah and I both have been very concerned about being open and transparent with every penny that we can show, and we've tried to do that as best we can.

While it may not be as clear as it needs to be, I wish I could be the one to explain where every one of those pennies goes. I'm not the one to do that; that's not my role. But I can tell you that we are trying to be as good stewards of the funds as we can. That the studies that we're doing right now with the Emory group, we've already had 400 people who have gone through a certain part of this. We have some 30 patients involved, but I'm not sure how all of that works. Remember, that's down at the program level. If you have further questions and you need further clarifications, Sarah and I are more than willing to accept those. We have nothing to hide.

Dr. Snell: As somebody who works on a shoe string budget, when I start to look at some of these numbers, I was somewhat appalled. Not to denigrate the science, but it just does not seem to be the best use of the funds. The thing that we asked for at a couple of previous meetings was for the CDC to consider more collaboration with outside entities. We meant people who work a lot cheaper. It would seem that there are people out there with great ideas who would love to work with the CDC for much less money.

I think the CDC needs to use the same mechanisms that are generally found throughout science--putting things forward to peer review. I always worry about these big companies that set up purely to do work for other people. Most of the money is obviously gone already, but I think that in the future, if we look at different methods for funding this sort of research in the CDC, it might be more inclined to consult outside itself rather than set a study up and contract somebody to do the work. Even competitive bids—if you're going to have a house built, you bring a couple of builders in and at least get two costs from them.

Dr. Hanna: Suzanne came to our neuroimmune mechanisms while she was still at the CDC. She and I both hoped that we could collaborate and perhaps put out a joint program announcement so that we could take advantage of all the wonderful scientists who are out their doing all this great NIH research. Today you just heard a little bit of it. If they could only have bid on analyzing this data and so on, I think you get a bigger bang for the buck. We shouldn't be awarding money like this without peer review. I don't think that that's for Dr. Miller or anybody to address. This is something that has happened and I think going forward they know exactly what they need to do. They don't want to shut this down. They have a great database, they've got a great program.

Dr. Snell: One thing I would like to see is Abt being held accountable for money that they've spent—to make sure that those are true costs and we're not seeing CEOs with huge payments.

Dr. Hanna: That's why it's important to have them present proposals the way we do with grants.

Dr. Jason: Is this testimony that Kim has delivered to us going to be made available to the reviewers who are going to the CDC next week? Is the review that comes from them going to be made available to us at some time so that we can see what they had to say? And finally, Anand, I'm wondering are there things that we as a committee can appropriately do in this issue that don't run into some kind of conflict with our bylaws? Are there some action steps one way or the other regarding these issues?

Dr. Miller: I think that the documents that were presented here are public documents now. They would be available. Our CFSAC chairman is slated to be a part of the peer review group, so if the chairman wanted to bring this document to committee, I'm sure he could. As for the report that comes from the peer review, yes, that's a public document also. That group writes that report. I don't know what the time frame is, but it should be written fairly soon after the two and a half day session.

Ms. Wiley: Yes, we do plan to make the report available publicly and we hope to do it soon. The report is to be written by the panel members and we can't expect them to turn that around in a week, so I can't give a specific time frame. It will need to be made in a timely manner, because we need to act upon it very soon. The clock is ticking on the Federal fiscal year and if we're going to be making changes to the program, those need to be initiated very soon. As far as recommendations from CFSAC, we would very much appreciate those. This is definitely a time for input and we are at a place in the CDC research program where we need your input here. Next week we're seeking the input of the peer review and following that, we'll be meeting as an internal leadership team to make some real decisions about FY '09 programming.

Dr. Miller: Sarah and I are both sensitive to the past issues of slow response or no response. We're sensitive about responding as quickly and as fairly as we can.

Dr. Parekh: In answer to your questions, Dr. Jason, the function of this group is providing advice and recommendations to the Secretary, and I think that CDC would continue to welcome this group's recommendations on these issues.

Dr. Jason: I could see a number of potential motions. One simple one could be that CFSAC could recommend to CDC to make this particular report available to those site visitors so that at least they can follow up with some of these questions when they are at that meeting next week.

Dr. Miller: There is an accusation in the report that I was not aware of, Kim. I did not know that there had been a threat of any kind from anybody at CDC, so that's an important document that we have in here now. If that's the case, we need to know about that.

Dr. Hanna: Maybe it doesn't have to be Kim's report that's made public, but rather the data on which she based her report, because I know that lots of people have been examining the NIH funding and the grants process. I've been going through this for years. Different organizations come to different conclusions. I was able to see that what I've been reporting over the years is dead right—NIH spends a lot more money on CFS research than what shows up in the NIH budget for various reasons. I don't think money is the issue, and I think when we're talking numbers, especially where accusations are involved, we shouldn't be presenting specific reports from specific organizations. But if you wanted to make the data available to your committee, then that would be another story.

Dr. Snell: This review is to be helpful to CDC so they can see areas where they can do things better. It would seem very obvious to me that one of the things that you would ask the reviewers to look at is, are we spending the money in the best way appropriate? I would hope that we wouldn't need to make that recommendation forcefully at all.

Ms. Wiley: I don't recall how the questions were worded that Dr. Monroe presented to you this morning as far as the charge to the committee, but one of them is about resources reflecting priorities. They will be getting budget information.

Dr. Miller: The chair will be free to delve into whatever issues the reviewers wish. It's up to the committee and we have nothing to do to control that.

Dr. Bateman: Since Kim represents a very well informed voice on behalf of patients and the public, I would like to ask you, Kim, what you would like to see the CDC do with their resources?

Kim: I'd echo what Nancy said, that the loss of this program would be devastating because it represents at least half of the Federal investment in science and education on CFS. That's limited to begin with, and we don't want to take that in half.

I do believe strongly that there needs to be a lot more oversight by leadership, and strategic vision that goes into how one dollar is spent or how $5 million dollars are spent, because the dollars are so precious. There are so few of them. We have to make them stretch further than if we were talking about the HIV budget or bioterrorism.

There are tremendous opportunities for CDC to be much more collaborative in terms of the science that it does. It has in some ways gone beyond the mission of a public health agency and tried to address some of the issues of the etiology and biomarker discovery that I think CDC has capacity to do, but I'm not sure that sending millions of dollars out to a contractor to set up studies is the best use taxpayer dollars.

I'm concerned about the peer review next week for reasons that were underscored this morning. The last peer review took place 10 years ago, so I'm not sure whether you're focusing on the past 10 years since the last peer review or a certain chunk of time since then. For five people to come in for two days and look at all of that data, it might be misleading. It's hard to get to that when you're faced with mounds of paper and trying to do an analysis. I've talked with Sarah about this—how the presentations are made, who the members of the peer review have access to, how freely the members of the research group can act with them—these are all important dynamics and we certainly saw that on the blue ribbon panel meetings. There was a bit of distance and we didn't get to question people as closely as possible.

I think there is tremendous passion among some of the people in the CDC research group. It's been diffused because there has been no strategic direction coming from the top over the past several years. That's evidenced by the lack of outcomes and the way that the dollars have gone out and not produced much in terms of product for this committee or the patient community or us as a nation.

There were a couple of things said this morning with respect to the GCRC study that I just want to clear up, and that may demonstrate these little subtleties. Dr. Monroe had a slide that showed that 400 patients had been evaluated. Those are patients that came out of the Georgia surveillance study, not new patients brought into the Emory site to be screened. They're coming out of another study, so you're sort of double counting the effort under two columns.

When it all comes out, there are only 30 patients studied and 60 controls. Mostly what's going on in the GCRC study is to look at CFS patients' response to the psychosocial stressor—a speaking test. Anybody who gave public testimony today can tell you what happens to them when they come up to a microphone and they have to give a talk. We know what happens. There have been studies. Eleanor's funded studies on that same thing. I don't know why we're doing that over. The fact that it's $4 million and that it's been spent over these years is one point, but looking at what the study's trying to accomplish is another mind boggling level. Why aren't we studying biomarkers? They took out a lot of the biology.

Dr. Bateman: I would like to know what you'd like to see done.

Kim: We've stretched epidemiology perhaps past where it needs to go because now we're broadening the definition, and other people feel subgroups are essential. The biomarkers, the treatment, the education—that's what we all know we need. We need a diagnostic test and effective treatments, and CDC has a role in that. CDC needs to do what CDC does best—not contract out a bunch of studies to contractors who are going to make more money at it than the academics would. There needs be some extramural piece of the program, there needs to be a lab effort that's maintained, and they need to be able to merge the unique ability they have to do things like longitudinal studies that only CDC can do.

Dr. Hartz: Would you change the current longitudinal studies as described?

Kim: The longitudinal study has been held up, as I understand, because it's supposed to have T0 , T1, T2, and now that timeline has been stretched out, and many of those patients are not able to be contacted. The way that things have unfolded, I don't know what we're going to get out of the way that things have been executed. The design was probably sound, and when it started off it was probably looking at the right things, but the way that it has been eroded over the years, it may tell nothing at the end of it. Particularly with the overlay of the empiric definition being the driving force of that study, we don't know what we're looking at anymore. You can't compare what the CDC is doing with what the NIH-funded investigators are doing because they're using entirely different definitions of CFS.

Dr. Miller: So the longitudinal studies are OK if we had a single definition?

Kim: Well yeah, what you measure and how often you measure it and how long you measure it. As Nancy said, we don't know what the cancer rates are in this community and CDC has had a program for 20 years. We ought to know that by now.

Dr. Glaser: I've been sitting here listening to all of this, and it's a really good interaction because it puts a lot of issues on the table that should have been on the table and really discussed seriously. Kim is right. This GCRC study is a good opportunity to get three days with detailed measures including some good immunology and a significant effort to determine etiology. It's the obvious thing to me that I would do if I were writing that study, and it wasn't there. I'm going to repeat this again: until we deal with a biomarker or markers, diagnostics, and etiology, everything flows from that. A lot of the social and legal issues flow from those two areas of research that should be supported. That's what individual PIs out there in the world and the CDC ought to be focusing on.

Dr. Klimas: Four years ago I was funded by the DOD to do study comparing Gulf War Syndrome compared CFS in collaboration with the CDC. In this study we collected samples from 105 people. We put them through an exercise stressor and we were trying to map out the mediators of relapse. The total budget was $450,000. We collected all the samples and did all of the expensive immunology. The CDC could not finish its portion of this study—the gene expression analysis for Gulf War Syndrome.

I was struck when I looked at that GCRC budget because they're basically doing the same thing, and they have $2 million this year. I have in the freezer everything completed except for the genomics part of my study. I have an appointment with the genomics team at the University of Miami next week and I think that they're going to help me out. I don't want to go back and collaborate with CDC because it's the second time I had the plug pulled on this study in the last year. It's embarrassing and it's also a missed opportunity. There's something wrong. I understand that budgets and priorities shift, but to not run the CFS samples seemed rather odd to me. I find that to be the most disturbing of the symptoms of what is happening at CDC.

Dr. Jason: I just want to thank you, Anand, for being extremely flexible with the meeting structure so that we were able to really pursue lines of questioning and deliberation that made today probably about the most interesting day that I've spent at one of these meetings. At the same time, I'm kind of struck by the issue that there's this incredible opportunity next week to do a peer review of a very important organization. Kim has said that she spent 18 years coming to these meetings and probably spent hundreds of hours coming up with her report.

We've had several years to think about some of the issues. There's so much that we have learned and so much that has occurred today, I'm just kind of nervous that when I asked Mike if this committee will have access to Kim's report, he replied that it's in the public record. There are thousands of things that are in the public record. There are lots of documents, and the peer review has a very short period of time, so again, I'm going to ask you, is something as important as that report going to be made available to the review committee?

Dr. Miller: Remember I said that the chair of this committee is going to be part of that board, so he should be able to take that with him. The answer to your question is yes, I see no reason why this should not be a part of that peer review. It's public, it's available, it's very germane to what's going to be discussed, and it should be there. They're going to have the same numbers that Kim had to work with.

Ms. Wiley: We are putting together the final packets of information that will be provided to the panelists before they come to the meeting. I see no reason not to include everything that has come from this meeting. It's germane, it's current, and we very much want your input. You have a time in your schedule to make formal recommendations. We very loudly and very clearly heard what you don't think we should do. We would really like to hear what you do think we should do. I've been taking notes. Let us know where you think our research priorities should lie. We will ask the same question next week of the committee, and it will then be up to the management and leadership team at CDC to make the final decisions of what we'll be doing in FY '09.

To address the question of timeframe, Dr. Monroe as the division director is the one who is actually directing the peer review effort. I don't want to speak for him, but I

believe that I am correct in saying that what we hope to do is to set the strategic direction for the next five years. While it is important to talk about what has gone on to date, and what's currently going on so we'll know what resources and data are available to the CDC program, I hope that we will not dwell on what has happened in the past, but rather be asking the committee next week for input into where we should go now.

Dr. Parekh: This has been a great day of deliberation. I would like to thank CFSAC members as well as members of the public as well as all of our invited guests.

Adjournment

Wednesday, October 29, 2008

Call to Order/Opening Remarks
Roll Call, Housekeeping

Dr. Anand Parekh

Dr. Parekh began the agenda by noting that CFSAC "had a very productive meeting yesterday," then proceeded with role call. All voting members and *ex officios* were present with the exception of the previously announced absence of Dr. James Oleske.

Dr. Parekh apologized for a late start due to CFSAC members receiving an ethics briefing. He then went over the day's agenda:

- Updates from the operating divisions at FDA, HRSA, and SSA.
- If time permits, an opportunity for members to meet their new DFO, Dr. Wanda Jones, and ask questions.
- Presentation on CFS & medical school education featuring Dr. Leonard Jason and a representative from the AAMC.
- A presentation by Kim McCleary on CFIDS Association provider education work.
- Public comments.
- Subcommittee lunch/breakout sessions.
- Final committee discussion.

Dr. Parekh reminded CFSAC members that they could make any comments, edits, and corrections that they have on the May 2008 meeting minutes during the current meeting or afterwards, whichever they prefer.

FDA Update

Dr. Marc Cavaille-Coll, Medical Officer Team Leader, *Division of Special Pathogens and Immunologic Drug Products, FDA*

We've continued to implement the FDA Amendment Act of 2007 by:

- Expanding the number of people at our White Oak [Maryland] campus, which is still under construction. Notably, we've been trying to hire 1300 new reviewers, project managers, scientists, statisticians, and epidemiologists in order to meet our increased mandate to look at drug safety and post-marketing safety.

- Reorganizing our Office of Safety and Epidemiology to accommodate the safety mandate. Within each of the drug review divisions in the Center for Drug Evaluation and Research, we've created the new position of Deputy Division Director for Safety and also of dedicated project manager. I think that this is certainly going to help us meet the challenge of being more vigilant about post-marketing drug safety and finding ways of communicating that to the public and to the clinicians in a very prompt manner.

- Improving our website with information for physicians and the public about the use and safety of products.

Dr. Cavaille-Coll responded to CFSAC members' questions:

- By law, he could not legally comment on Internet rumors that Ampligen will be approved within the next several months because it is currently under review at the agency.

- He appreciated the presentation by Dr. Rowe "as a way to inspire our own ways of doing things" in the United States. He said that he was reminded of a statement made about 10 years ago when the coordinating committee had a session on pediatric CFS—"children are different than adults because children must go to school. I was very interested in how this is being accommodated in Australia and hope that we find ways of doing this here, too."

HRSA Update

Dr. Deborah Willis-Fillinger, Senior Medical Advisor, *Office of the Administrator, Center for Quality*

Accompanying Document: "*Chronic Fatigue Syndrome (CFS) Continuing Ed Opportunity" memo*

- HRSA consists of five bureaus that focus on a range of subjects related to patient care and healthcare outcomes. Direct patient care services are provided through a number of its bureaus and offices:

    - Bureau of Primary Healthcare includes in its programs community healthcare centers that serve approximately 16 million Americans.
    - HIV/AIDS Bureau has the Ryan White programs that cover about 350 different grantees that have direct care services for HIV patients.
    - Office of Rural Health Policy covers programs that provide prevention, screening, and support services to rural communities.
    - Maternal and Child Health (MCH) programs have a number of direct patient care services. The MCH block grants to the states provide prevention, support services, and some direct services as well.
    - The Bureau of Health Professions targets our health workforce shortages and focuses on making sure that the right people are present with the right skills in the right places to achieve the right health outcome.

- Within the Bureau of Health Professions:

    - The AHECs assist with development of preceptors. They recruit preceptors for training students in health professions.

- There's a focus on community and academic partnerships. The continuing education opportunities developed by the AHECs are certainly important to those communities in which they're located.
- There are about 53 AHECs in 46 states.
- Since their inception in 2007, AHECs have provided continuing medical education to more than 300,000 health professionals.

- In response to a May 2008 CFSAC recommendation, HRSA sent out an email dated October 3, 2008 notifying the AHECs that there is an urgent need for health provider training and education in CFS, that CFS patients are an underserved population, and that CFS would be a topic of interest as a continuing medical education course. The email also mentioned that AHEC Branch Chief Lou Coccodrilli will be looking for feedback from AHECs about the interest that there may be in CFS education in the different areas.

- HRSA continues its focus on improving access to services and on improving healthcare outcomes. There are a number of quality improvement activities and collaboratives underway including a patient safety and pharmacy collaborative targeting medical record conciliation and patient and clinical pharmacy services in communities to insure enhanced patient safety.

- HRSA has an ongoing task of implementing the Performance Measurement and Quality Improvement Act by improving adherence to clinical guidelines and proper standards of care. The information about the CDC's CFS website was shared with the 8600 individuals and quality improvement organizations and collaboratives that work with HRSA through a Knowledge Gateway listserv. The organizations focus on health areas such as cancer screening, immunizations, and cardiovascular disease. "I'm starting to get questions now about how to treat CFS. My colleagues at the agency have taken a look at the website and now wonder, What do we do?"

Committee Discussion

- **Dr. Willis Fillinger** said that she would provide follow up to CFSAC on actions taken by AHECs as a result of the CFS email. Both **Dr. Klimas** and **Ms. Artman** predicted that it will have a tremendous impact for the CFS patient community as people are educated.

- **Dr. Klimas** volunteered the IACFS/ME as a speakers list for AHECS. Dr. Willis-Fillinger suggested that the list be made available directly to individual AHECs.

- **Dr. Jason** noted that AHECs sponsored a successful provider education program on CFS in years past and asked whether there is interest and resources to continue that program. Dr. Willis-Fillinger replied that the program that specifically targeted CFS longer targets resources for individual diseases unless directed otherwise. Dr. Jason wondered how AIDS got so much attention from

HRSA when CFS cannot get similar targeting of resources. Dr. Willis-Fillinger replied that the AIDS epidemic generated a tremendous amount of political interest and public support over the last 20 years. Agencies such as NIH, CDC, and HRSA got funding through legislation for those particular topics. She said that HIV/AIDS is the only specific disease that gets targeted attention. She added that the quality improvement collaboratives focus on particular topics that communities choose, so the specific areas are population-driven on a community-by-community basis.

- Dr. Willis-Fillinger said that she will find out whether HRSA directly funds as a line item the school-based centers that were discussed the previous day during the adolescent CFS roundtable. In general, HRSA does not encourage research through its clinical programs. Rather, it helps ensure that clinicians are following guidelines and performing under the standards of care. At the same time, the discussion of school-based clinics also included the DE and the educational response to clinicians who identify CFS, including the increased awareness of school nurses. As providers become more educated about CFS and are able to diagnose it, their "willing partnership" with schools for students' best interest is probably the best way to approach the issue.

- **Dr. Bateman** noted the availability of a new CME program through Medscape that provides the basic structure of the CDC CME with additional steps about supportive care and advocacy so that providers have a little bit more to do in taking care of their patients.

SSA Update

Dr. Laurence Desi, Sr., Medical Officer, *Office of Medical Policy, SSA*

- I'm in the Office of Medical Listings Improvement where we've formed an ad hoc work group to address the concerns of the CFS community. We are reviewing the guidance that we provide our adjudicators to make sure that our instructions are clear and consistent with the current state of the art.

- We will be reviewing and updating the educational opportunities that we provide for adjudicators, medical consultants, and consultative examiners. We are not only providing referrals to appropriate websites like the one at the CDC, but we're providing actual educational activities in terms of how to adjudicate claims where CFS is one of the impairments that is being claimed. We expect this activity to continue into 2009.

Committee Discussion

Dr. Desi said that he did not have statistical information to report on CFS claimants and their case statuses and would have to report back to the CFSAC executive secretary on when he could provide such information.

Ms. Artman noted that the next CFSAC meeting would focus on employment and requested that Dr. Desi look into answering her question about SSA's Ticket to Work Program that appeared on page 57 of the May 2008 CFSAC meeting minutes. She read the question:

"With this illness people tend to push-crash so someone could work four hours a day and be out for three weeks. Ticket to Work really isn't employer friendly. The SSA website says that if you are self-employed and work for more than five hours a month, you are no longer eligible for SSA disability. You could earn much more if you're working for an employer. I want an explanation of that discrepancy. Why can't you be self employed and work for more than five hours? I don't see how anyone with this disease could work 10 hours a month and be able to support themselves. I can understand a 20-hour limit or something similar, but a total of five hours a month is confusing."

Ms. Artman asked that the reasoning behind the five-hour limit be provided by the next CFSAC meeting. Dr. Desi said that he would get an explanation back to the CFSAC executive secretary as soon as possible.

Dr. Snell discussed how adjudicators look at individual cases. He asked if they review cases based on an illness designation or look specifically at symptom complexes. Dr. Desi replied that adjudicators can look at a case either way. They don't need a specific diagnosis. An applicant could have a "medically determinable impairment" [a term that appears in the statute] without a specific medical diagnosis. The impairment is measured by signs, symptoms, and laboratory findings. When SSA has a diagnosis, it still needs medical evidence in the file to support that diagnosis. The adjudicatory team and the state departments of employment services have a medical consultant [physicians for the physical side; psychiatrists or psychologists for mental health issues] so that the disability examiner has medical input. Adjudicators are trained in the body systems and mentored during on the job training for their positions.

Dr. Snell said that it would be interesting to see comparative statistics for CFS when compared with diseases that share some of its symptoms, such as FM or Lyme disease. He was interested in whether the diseases are looked at differently or whether the process changes for similar symptoms with different illness designations. Part of the issue is the coding, said Dr. Desi. SSA generally codes on a subgroup of the ICD-9 [International Statistical Classification of Diseases and Related Health Problems]. It's not as specific as the ICD-9 or ICD-10 code, said Dr. Desi, so that puts limitations on how much detail he will be able to get. He said that SSA has just started coding for some of these conditions in the last year or two. Dr. Snell made a formal request that CFSAC receive a copy of the code list if possible.

Dr. Klimas said that her patients often wait a long time for their cases to come up in the appeals process and she has noticed regional variation. She asked if it's a matter of waiting in line or if regions have the latitude to change to the order of cases. Dr. Desi replied that the current commissioner inherited a huge backlog of cases, with people waiting up to 700 hundreds days before getting a hearing. He said that some circumstances move a case to the front of the line, including terminal illness which can be declared by the claimant at the beginning of a case or by SSA officials at any time during the adjudication, or a case that is on the "list of compassionate allowances," which is available on the SSA website. These cases are generally rare and/or catastrophic diseases diagnosed and backed up with medical documentation.

Other than those exceptions, there's a specific path that cases follow based on first in/first out, he explained. The SSA is making strides to move things through more quickly by hiring and training more administrative law judges to help with the backlog of cases in the appeals process. The time required has dropped below two years, but Dr. Desi acknowledged that when someone is disabled and needs the money, "the next day is probably not soon enough."

Dr. Klimas inquired about the wait time between being qualified as disabled by SSA and being eligible for Medicare. Cautioning that it is not his area of expertise, Dr. Desi said that a person is eligible to apply for Medicare after being disabled for five months, but must wait two years from the onset of the disability to qualify. He added that these wait times are set by statute. A person who is eligible for medical assistance can begin to receive it as soon as he/she qualifies for SSI [supplemental security income]. Medical assistance is a state-run program funded by Federal dollars for people who have limited income and resources to provide medical care.

Meet and Greet with the New CFSAC DFO

Dr. Parekh allotted 10 minutes before continuing with the agenda so that CFSAC members could meet and question **Dr. Jones**, their new DFO.

Dr. Jason: Where are you are within the hierarchy and how does that relate to where Anand is within the hierarchy? How you will relate with Anand after this meeting? What types of differences might that involve in terms of either access to resources that we might need as well as policy?

Dr. Jones

- I know where Anand's office is and I'm not shy. If he thinks he walks out the door today and won't have to deal with this again…he's young, but he's not naïve [laughter]. Anand and I have worked together on a number of projects and have a healthy amount of respect for each other. He's briefed me and I fully expect to keep going back—less and less over time.

- I have staffed Federal advisory committees in the past, including an HIV/AIDS advisory panel. Currently, we provide the HHS staffing out of my office for the DOJ-chartered joint advisory committee on violence against women.

- Like Anand, I am a deputy assistant secretary and came up in 1998. I expect to be here for the foreseeable future. I'm not anticipating any changes between now and May because we're career senior civil servants, but it can get a little funky sometimes with new leadership.

- I have a staff assistant who just started on Monday who will be providing a lot of the CFSAC logistical and travel support. She has volunteered, and she is self-identified as a person with a disability. I employ two people with self-identified disabilities within my office.

- We are an office on women's health, but we were the first entity anywhere within HHS to recognize that men exist [laughter]. When our website went live 10 years ago, we had a men's health bucket and it remains there to this day. For the longest time it was in the top three men's health hits for Google. I'm pleased to say that the men's health network has gained tremendous strength. We partner with the men's health network.

- We are really moving toward a gender and women's health perspective. Where we are going to make the biggest gains is to recognize where we share issues, but also where the same issues might play out differently for women and for men. That's where we are hoping to evolve.

- I realize that CFS is not a woman-specific disease, but neither is HIV, and we have never lost our traction and our advocacy and our leadership in the department on women with HIV. We have invited ourselves to meetings. We now get several million dollars from the minority AIDS initiative to target minority women. I have a staff of people who are not shy about anything that is going to help lift up problems that are neglected.

- Olga will still have some role because she's responsible for Federal advisory committees within the Office of Public Health and Science, but I think that we can take some of the logistical load off of Olga's plate because I have a person willing to step up and do that. We will let you know who points of contact are.

- These next six months are going to be an exciting time. We would ask your patience, but don't be afraid either to speak up.

Dr. Parekh outlined the organizational location of Dr. Jones's office:

- Within the Office of the Secretary, there is an Office of Public Health and Science led by the Assistant Secretary for Health. That's the office that we're in.

- Within our Office of Public Health and Science, we're broken up into sub offices such as the Office on Minority Health, the Office of Research Integrity, the Office of Disease Prevention and Health Promotion, the Office on Women's Health, the Office of the Surgeon General, etc.

- We have 11 Federal advisory committees like CFSAC in the Office of Public Health and Science. To date, all of the advisory committees except CFSAC have been supported from an administrative and management point by one of the sub-program offices. Management felt that to ensure support for this committee and the work it does—to ensure support for the important public health issue of CFS, especially during this transition time—a program office should be identified to help with the administrative and management aspects of CFSAC.

- Dr. Jones leads the OWH and is also probably the highest senior career level person in the entire Office of Public Health and Science. Dr. Jones reports directly to the Assistant Secretary of Health. This is a step forward for CFSAC in terms of its place within the Office of the Secretary.

- Dr. Jones added that she has been very active in the President's New Freedom Initiative both for people with disabilities and for mental health system transformation. She added that she has deep contacts in the Education and Labor Departments that are highly relevant to some of the CFSAC discussions. She also has relationships with DOD and the Department of Veterans Affairs. There will be procedures for formally engaging those departments, but she and her staff are also quite accustomed to providing the sorts of connections needed to find out at an informal level how CFSAC might help or who or where to make a contact. "We will be an asset to this committee," she said.

- Dr. Parekh explained that his role will be primarily as an advisor to Dr. Jones. He said that he is also a career civil servant and will help to provide a smooth transition over the next several months.

Dr. Klimas noted that she is happy to see that Dr. Jones has contacts with departments outside of HHS because the Education Subcommittee is anxious to take action on education issues discussed during the meeting. She noted that both she and CFSAC have worked in the past with DOD and VA on Gulf War illnesses. "We have communicated with them on an as-needed basis, but it would be nice to see that as more of a standing invitation to work with CFSAC," she said.

Dr. Jones agreed that it would be helpful all around. "We have had DOD, VA, Education, and Labor at the same table, and we have been chewing on many of these same issues. We have actually seen some very positive steps over five years. If agencies don't engage, we need to keep trying to pull them in and keep it substantive. I think in the example of Education, we've got something substantive that DE should be very interested to come and help us understand, and help us see if there are solutions that we can work on together. I will make that commitment to you to carry that forward."

CFS & Medical School Education Panel

M. Brownell Anderson, Senior Director, Educational Affairs, *American Association of Medical Colleges;*
Dr. Leonard Jason, Director, *Center for Community Research, DePaul University*
Accompanying Document: *Frequency and Content Analysis of CFS in Medical Textbooks*

Ms. Brownell's Presentation

AAMC:

- Represents 130 U.S. medical schools.
- Does not represent osteopathic schools [they have their own association], but works very closely with them.
- Represents 17 Canadian medical schools.
- Has strong governmental and public relations arms.
- Represents teaching hospitals and 90 academic societies.
- Does not dictate curricula. There is no required, standardized medical school curriculum. There are standards by which schools are accredited, but those are deliberately broad to give the faculty of the medical schools the latitude to do what they need to do, and to recognize that schools have different missions and different emphases, such as research versus community practice.
- Collaborates with other organizations, convenes groups, and advocates for certain things in curricula by virtue of writing reports and preparing presentations.

We've worked with certain specific topics, and I would classify this as one of our "orphan topics." We have a list of about 100 orphans, and it varies every year. As we change the focus of how we teach medical students to look at prevention and wellness, chronic illness, and patient-centered care, topics like CFS have more of a place. We have a database of medical school curricula that is self-reported. A search revealed two schools that listed CFS—East Tennessee State and Johns Hopkins University. They may not be the only schools that touch on the topic, but they are the only two that listed it for the database.

Dr. Jason's Presentation

Dr. Jason said that he also planned to give his presentation at the Reno IACFS/ME conference.

He noted that there are about 200 publications each year on CFS, according to Freidberg and Associates. It is unclear how CFS is represented in the published literature, particularly with medical textbooks. Medical textbooks are important because they are:

- A cornerstone in the training of medical staff and students.
- A main source of references and reviews for medical professionals.
- A source of information on coding and treating a variety of illnesses.

The objective of Dr. Jason's study was to evaluate the coverage of CFS in medical textbooks to determine the extent and comprehensiveness of CFS information.

Textbooks were gathered from a number of sources including university medical school libraries and medical school book stores. The study looked at 129 textbooks in different specialty areas. The areas of interest in the study were the number of pages and percent of space allotted to CFS. Dr. Jason discussed pages in his presentation. The comprehensiveness and extent of representation of CFS information was included, and CFS was compared with to other illnesses.

Page representation:

- Looked at a total of 140,552 pages in 129 textbooks. Always took the most recent version of a textbook, primarily within the last seven or eight years.
- CFS was represented on 125 pages, or .089 percent of the potential pages examined.
- Holistic, psychiatry, and internal medicine texts had the highest percentage of mention of CFS; endocrinology, obstetrics, and emergency medicine the least.

If CFS was mentioned, the study also examined information concerning:

- The illness ideology.
- The probability of Axis 1 disorder.
- Treatment options.
- Prevalence rate.
- Inclusion of ME terminology.

Results:

- 53 textbooks (41 percent) of the 129 textbooks had some mention of CFS. The problem, of course, was that there was very little mention.
- 42 textbooks (32 percent) had something about etiology. Sometimes it was biogenic, sometimes psychogenic, sometimes both.
- 17 textbooks (13 percent) mentioned the high probability of Axis 1 Disorder [a major psychiatric problem].
- 25 textbooks (19 percent) mentioned some criteria.
- 37 textbooks (28.7 percent) indicated some treatment associated with CFS. The most common were cognitive behavior therapy, anti-depressants, graded exercise or exercise, and supplements.
- Only 18 textbooks (14 percent) had any mention of prevalence rates.

- Only 19 books (14.8 percent) had any mention of ME terminology.

Summarizing this part of the study: Critical domains within CFS are not well represented in medical textbooks, either in terms of etiology, criterion, or treatment options.

Illness Comparison

Next the study analyzed a random sample of 45 books from the 129 to compare CFS with illnesses that are much more prevalent—cancer and diabetes—and with illnesses that are less prevalent—MS [multiple sclerosis] and Lyme disease.

Even the illnesses that are less prevalent than CFS have greater coverage in medical textbooks. CFS appeared in 24 percent of the 41,922 pages while Lyme disease appeared in 61.8 percent and MS, 53 percent.

Major findings:

- CFS is underrepresented in medical textbooks.
- CFS is also given fewer pages than diseases that are less prevalent.

Why does this matter?

- 77 percent of CFS patients reported they had experienced a negative interaction with a healthcare provider.
- 66 percent believe that their condition had been made worse after seeking care from their doctors.
- Family physicians feel the continuing education and training they received leave them unable to diagnose and manage CFS.
- 48 percent of general practitioners did not feel confident that they could diagnose CFS.

Conclusions

- Healthcare professionals need to be adequately trained and provided with up-to-date, non-biased information in their textbooks.

- Medical textbooks may be a critical component in raising CFS awareness and there is a clear need for this illness to receive more representation.

Committee Discussion

Dr. Klimas told the committee that her university doesn't have a single lecture on CFS in the medical school curriculum. She must get student organizations to sponsor her volunteer CFS lectures and offer them over lunch. She has been told that CFS does not fit in rheumatology, infectious disease, or any other subgroup.

Ms. Anderson suggested that rather than focusing on textbooks and lectures to deliver information on "orphan" topics to medical students, Dr. Klimas and others can turn to the Internet, which is increasingly becoming the medium of choice for students. Ms. Anderson highlighted Med-Byte, an online repository available to anyone in the world that offers 1,000 peer-reviewed resources, including virtual patients and patient cases. She said that technology can provide a way to embed CFS into existing curricula rather than deliver the information as a standalone lecture.

Dr. Klimas asked whether there is any way that the AAMC could use its influence. For instance, the group could insert CFS as an example in the guideline language for self-study courses in women's health. Ms. Anderson said that the accreditation self-study cited by Dr. Klimas is handled by the Liaison Committee on Medical Education (LCME). While both the AAMC and American Medical Association are represented on the LCME, they do not have anything to do with what is in the standards except to the degree that they advocate for things. The requirement in the standards is that students must have clinical experiences in six core areas, including family and internal medicine.

Ms. Anderson said that if AAMC can find enough examples and bring CFS to the level that women's health has reached, then CFS would get a mention in the standards. She said that examples would have to be gathered of where CFS is being taught and where there are the perceived gaps, then incorporate the subject into existing curricula. "When you find ways to do that, it will reach the level of the LCME saying, 'This is an important standard to include,'" said Ms. Anderson.

Dr. Klimas asked what CFSAC could do to influence that process. "I think that on a case-by-case, medical school-by-medical-school basis, we're all being very imaginative. But there are 130 medical schools and you only found two with even a mention of the topic. That's so disturbing."

Ms. Anderson; There are hundreds of topics that are not mentioned. I don't think that we can draw conclusions about what is and isn't in based on those two schools. As to what your committee can do, interactions with the VA are one thing that I think about, because we do a lot of work with the Department of Veteran's Affairs. Another idea is "The Graduation Questionnaire," which many of you might have actually completed. We ask all graduating students to complete this. We include what I call the Goldilocks questions that present a list of topics and ask whether they were addressed adequately, inadequately, or excessively. That's one of the ways that we have been able to demonstrate deficiencies in the curricula as perceived by the students. If we had 20,000 graduating students saying, "We never heard of CFS," that gives us some ammunition to say that this is something that needs attention.

Dr. Willis-Fillinger: You mentioned that the AAMC doesn't actually dictate or guide the decisions that those 130 schools make about what is taught, and I was wondering what part the board exams might play in terms of getting the attention of those schools. What does drive the curricula at the schools?

Ms. Anderson: The USMLE [United States Medical Licensing Examination] drives the curriculum, without question. We work very closely with the national board of medical examiners that, with the Federation of State Medical Boards, makes up the USMLE. The exam is going through significant changes. Currently there are three steps. Step 1 focuses on the pre-clinical sciences, Step 2 focuses on clinical sciences and includes a knowledge/skills exam with standardized patients, and Step 3, which is taken in residency. They have been looking at collapsing Steps 1and 2 into a single examination that students would take sometime before graduating from medical school. As in the rest of the education field, the USMLE is moving towards being competency-based. So there might be a real opportunity for conversation with the testing committees. Those exams are written by medical school faculty. I would encourage you to identify faculty members you know who are on those exam committees.

Dr. Snell asked whether the accreditation process is also moving toward centering on competencies. Ms. Anderson replied that the accreditation process is undergoing significant change for two reasons. One is because of the influence of competencies. The other is the different approach that schools are taking towards redefining medical education. There are at least 12 new allopathic and osteopathic schools, either open or in the pipeline, that take a different approach toward students, and the accrediting body has to accommodate that. "The time is propitious for you to think about how to engage the community and bring CFS to people's attention," she said.

Ms. Artman asked whether AAMC could co-sponsor a conference for medical students along with a CFS professional organization. Ms. Anderson noted that AAMC does hundreds of conferences including those with student organizations. She suggested that the conference would have a more powerful effect if medical school faculty were included because they are the ones who would then be incorporating the information into the curriculum. Ms. Artman asked whether AAMC could assist IACFS/ME in inviting med school faculty and students to the group's upcoming annual meeting. Ms. Anderson said that AAMC could put the IACFS/ME meeting on its list of major meetings and medical conferences. She also offered her mailing list of education deans.

Ms. Healy asked if students have a blueprint for the USMLE and if CFS or other terms related to the issue are on it. Ms. Anderson said that the blueprint is available on the web, but she did not know all of the topics included. She added that AAMC is working increasingly with physician assistants to encourage the inter-professional approach.

Dr. Klimas inquired how CFSAC could get involved in conferences that AAMC is already giving on curriculum development, particularly if there is a focus on orphan illnesses. Ms. Anderson noted that 85 percent of the AAMC annual meeting is focused on education, with 45 workshops and 60 small group discussion sessions, all peer reviewed, plus exhibits. She encouraged CFSAC members to submit something for next year's meeting. An exhibit could present what is going on in the teaching of CFS and how it is represented. "That's the sort of thing that starts getting people's attention."

Dr. Desi asked if data was available to compare with other patients' (other than those with CFS) experience with healthcare providers and healthcare providers' experiences with other illnesses. Dr. Hartz said that he has done a crude survey of physicians in Wisconsin asking how many of them felt comfortable taking care of patients with CFS and how many felt comfortable taking care of patients with psychological illnesses such as depression. About 45 percent said that they felt they could help patients with depression, while only 3 percent thought that they could help patients with CFS. The CFS number was much lower even when compared with a disease without a well-defined etiology on which to base management.

Dr. Desi noted that other patients with even more serious life-threatening conditions have negative interfaces with providers, and he wondered how they compare with the experiences of CFS patients. Dr. Klimas said that she did a study after Hurricane Andrew that included a PTSD [post traumatic stress disorder] survey done in the hurricane zone of south Miami and the non-hurricane zone of Fort Lauderdale using CFS patients and controls. The hurricane zone had a lot of PTSD-level trauma. Surprisingly, the Fort Lauderdale CFS group also did. When she asked that group what their trauma was, the subjects replied that it was their interaction with their healthcare provider. The experience was so negative that it was an intrusive thought that woke them at night and was the trigger to their anxiety reaction.

She noted that "when we give lectures at primary care conferences, they are always very well attended. It's not the lack of desire to want to do well. It's having access to only superficial and cursory information, making that your knowledge base, and then trying to apply medicine. It's the single most pressing concern of this committee: What are we going to do to get these patients compassionate and educated care?"

Dr. Jason emphasized the impact of making systemic versus individual efforts to effect change and asked Ms. Anderson for ideas on how CFSAC could influence the audiences that could touch potentially thousands of students through both online resources and medical textbooks. He said that a group within IACFS/ME is beginning to write standards for emergency medical texts and other arenas. He said that a two- or three-page piece could be written, then distributed to key people who might be able to use it. He said that as an academic, he is not sure how one translates information into the public domain.

Ms. Anderson encouraged CFSAC members to submit material to the MED-ED portal site. She noted that everything is peer reviewed and tagged so that out-of-date materials do not remain on the site. She said that a web portal is much more easily brought up to date than a textbook and noted that some in the education field think that textbooks are on their way out. She encouraged CFSAC to "go to something that people actually look at and use."

Dr. Hanna mentioned Wikipedia as another place for online information. She backed up Ms. Anderson's suggestion that creating a symposium with solid information about

CFS to take to the AAMC conference is an effective way to make inroads into the group's thinking.

Dr. Klimas noted that in many curricula, students are assigned a patient to follow for four years, and it is difficult to find enough patients who want students to pop in on them intermittently for four years. She provides 35 CFS patients every year. She said that has probably been more influential than any other one thing that she has been able to do at her medical school.

Ms. Healy asked Dr. Parekh if the programmatic requirements for Title 7 medical school funding are handled by HRSA and if so, would CFSAC be able to influence some of the criteria for Title 7 funding to relate it to CFS and innovative, patient-centered care, even if only by citing CFS as an example of how to be integrative? Ms. Healy said that guidance language goes out with the funding, and CFSAC may be able to make a recommendation concerning a mention of CFS.

Dr. Willis-Fillinger said that she would check on Title 7 language, but added that the Bureau of Health Professions does not dictate curricula or specific topics to the schools that are funded through its programs. Dr. Willis-Fillinger said that she would check on the guidance language, but said that it would be very broad and not specific about CFS in particular.

Dr. Hanna said that it's true that medical schools are reorganizing their curricula—not in the sense that they're bringing in diseases, but in terms of how they're looking at the big picture. "Having come out of that environment and having dealt with a difficult disorder and having been part of how it got integrated, I can tell you the best way to move is for you to go where you can get the most people to hear you and you can influence them and try to make small inroads," she advised.

Dr. Snell said that textbooks are indeed going out of fashion, partly because they're out of date as soon as you get them. Publishers are now renewing textbooks on a two-year basis. Students are rebelling against that because the books are so expensive. "I am bombarded by textbook companies and what I look for are the 'free gifts'—the resources that they're offering that will help me teach. Maybe our best tack is to go to the publishers and find out how we can provide resources to help them. The exams also drive the textbooks."

He continued that CFSAC could explore looking at some of the primary symptoms of CFS and emphasize those rather than the term "CFS". Certainly a section on fatigue in a textbook is going to be seen as extremely important, so the committee can help make sure that the section references the various components of fatigue. "It's a big task, but if we're going to take it on, let's take it on with everybody," he said.

[Dr. Parekh called for a five minute break.]

CFS Provider Education

Kim McCleary, President and CEO, *CFIDS Association of America*
Accompanying Document: *"Provider Education for Chronic Fatigue Syndrome"*

Organized Clinician Education Phase 1 (1998-2003)

- The CFIDS Association has been involved in organized clinician education since just before 1998.
- We got started with HRSA in 1997 trying to develop mechanisms by which we could get education out to healthcare professionals.
- We initially focuses on physicians, PAs, and nurse practitioners (NPs) working in primary care settings.
- CDC took over the responsibility for funding from HRSA.

Organized Clinician Education Phase 2 (2003-2005)

- We added national exhibits at conferences.
- The continuing education curricula developed in several different access formats (print, video/DVD, online, USB/computer).
- Grand rounds replaced the train-the-trainer approach.
- We expanded to other allied health professionals (physical therapists, occupational therapists, behavioral health therapists).

Organized Clinician Education Phase 3 (2006-2008)

- We augmented outreach to medical audiences through the public awareness campaign.
- As "The Faces of CFS" moved around the country, CFIDS localized media outreach to generate local interest. Local provider organizations were alerted and directed to more resources online to address an increase in their own and patients' interest.
- "CFS Toolkit for Health Care Professionals" was developed for distribution at national conferences, websites, by individual request.
- Media contacts were made to professional publications.
- Provider education shifted to more research/evaluation by the CVDB (chronic viral diseases branch through the KAB [knowledge, attitude, and beliefs] surveys.

Outcomes

- Train-the-trainer sessions yielded 2,251 educated providers, but five trainers educated 74 percent of the audience reached. That ceased to be cost effective, which is why grand rounds replaced these sessions.

- 55 conference exhibits reached 11,623 providers through booth visits (direct interaction, not just milling by the booth):
    - Conferences of over 1,000 generated the greatest number of booth visits (average of 269/conference).
    - Smaller conferences yielded higher percentage of booth visits by attendees (average of 87/conference).

- Distributed 8,796 CE courses through 12/31/07 when the contract with CDC ended.
- Issued 1,533 continuing education credits (17 percent completion rate).
    - Online format most popular – 1,292 certificates issued (42 percent completion rate).
    - Print-based – 223 certificates issued (5 percent).
    - USB – 618 distributed as rewards for taking the KAB survey. 0 certificates issued.
    - CEUs: 564 (37 percent) issued to OTs/PTs.
    - CMEs: 349 (23 percent) issued to physicians.
    - CDC should have continuing education data since 1/1/08.

- Improved coverage about diagnosis/management of CFS by top medical publications: *AMA News*, *JAMA*, ACP *Observer*, AANP *SmartBriefs*, *OB/GYN News*, *JAAPA*, *Arthritis Practitioner* (Hanna). One of the best ones was the ACP *Observer* piece that included interviews with Dr. Bateman and other clinicians. The article was thorough, user friendly and mentioned both research and clinical topics. The audience is from internal medicine and quite conservative, so CFIDS was pleased to have a prominent feature article in their publication.
- Presented 29 grand rounds presentations at 15 institutions reaching 1,370 professionals/students. Grand rounds are a mechanism with which one can reach providers in training and providers in the field, who are generally on staff.
- Distributed educational print materials:
    - 30,000 pocket resource guides
    - 1,704 CFS booklets
    - 2,900 Provider Toolkits (printed); 60,000 online
- Collected 1,695 KAB surveys.
- Published 1 peer-reviewed article.

Organized Clinician Education Phase 4 (2008-forward)

- CDCRP supports online continuing education course.
- CDCRP supports one contract employee who is focused primarily on evaluation and research within the provider community.
- Outreach through public awareness campaign continues with support from the NCHM. Getting good cooperation from the AHECs; professional organizations such the American Academy of Family Physicians, American Academy of Physician Assistants, American Academy of Nurse Practitioners; and an increasing number of medical institutions.

- Have sought some private funding for projects that will build on the advice from people who have appeared before this committee, the *ex officio* members, and the appointed members of CFSAC.

2008 Partnership with Medscape

- Early this year, CFIDS got involved with Medscape. We wanted to take the advice that we heard to leverage existing materials and dramatically improve their return on investment. We don't really need to create a lot of new materials. There is a lot of information out there that physicians just don't know about.

- We focused on what providers told us they want most—clinical information and tools that they can use right away.

- CDCRP and NCHM declined participation because they aimed to reach more providers directly by hosting the CME unit on CDC's website.

- The format and content of CFIDS material is based on the Toolkit, which is in the public domain, with three times the clinical information included in our unit.

- We cited sources throughout, which is Medscape's format, so that the information is fully documented with peer-reviewed citations.

- Drs. Cindy Bateman and Charles Lapp helped us develop case studies to meet Medscape's format.

- We embedded several evaluation measures.

- Medscape is the largest CME provider to medical professionals and used their marketing strength to reach the following groups, many of which are not thought of as the traditional CFS-type providers:

  - Allergy & Clinical Immunology
    Neurology & Neurosurgery
  - Nurses
  - Ob-GYN & Women's Health
  - Pediatrics
  - Pharmacists
  - Psychiatry & Mental Health
  - Public Health & Prevention
  - Pulmonary Medicine
  - Rheumatology
  - Cardiology
  - Emergency Medicine
  - Family Medicine
  - Gastroenterology
  - Infectious Diseases
  - Internal Medicine
  - Medscape Today
  - Med Students

- As of Oct. 27, 2008 (2.5 weeks since launching):
  - 9,051 certificates issued (six times the amount in five years with the CDC contract). Medscape was blown away. We're hoping that in the first six weeks we pass the 10,000 mark.

  - 25 percent are physicians.
  - 60 percent are nurses.

- We don't have the traffic data yet, but views of course material will be many times higher. We're collecting data on knowledge and attitudes because the attitudinal part is such an important aspect of patient care. Until then:

  - 45 percent of participants view "lack of diagnostic test" as greatest barrier to diagnosis, while 29 percent consider "prolonged rule out phase" to be the greatest barrier.
  - 81 percent name the fact that "treatment varies patient to patient" as greatest barrier to effective management (the trial and error approach is a challenge).
  - 72 percent endorse "aggressive symptom management" as the most effective means of helping patients achieve the best function—much higher numbers than those who named antidepressants (22 percent) or exercise (4 percent).
  - 72 percent consider CFS to be a "difficult" or "moderately difficult" diagnosis to make.
  - Feedback forms about the course have been overwhelmingly positive about the need for coverage of the topic, with very few comments that CFS is not "real" or "valid."
  - We will have this particular unit available on Medscape for one year.

Moving Forward

We've had an ongoing dialog about "products versus pipelines." It's not the content that we have to develop, it's the vehicles and partners to access and provide credibility with the professional audience. The discussion includes some things that came up earlier at this meeting—the online sources that people are increasingly turning to more than anything on paper and the PDAs that doctors use to analyze symptoms. We have got to get into those resources, especially as physician extenders take over and standalone clinics are caring for more and more patients.

What do providers want?

- The clinical emphasis is really important. In the past there has been a real tendency to cram research information down clinicians' throats to prove to them that this is a valid illness, but that's not what they need when they walk into the examining room with the patient.

- The evaluation data that we've gotten so far and the focus group work that we've done show that providers want the same things that patients want:
  - Reliable diagnostic tests that they can use to cut the time from the first visit to a firm diagnosis.

- Effective treatment or treatment protocols—things they can use to help them make decisions about which drugs and lifestyle accommodations might be necessary and which other providers to bring in for treatments such as physical therapy and pain management.
- Just-in-time access to information from reliable sources. Focus group research of MDs consistently shows that Google is the number one resource when they have a question about a patient. Making sure that CFS information pops up high on the Google list is important.

What we have to do is demonstrate successes to other providers and show that CFS is a diagnosable and manageable condition. We need to move towards the things that we've heard are really going to make a change in policy decisions and reimbursement issues:

- Standards of care.
- Treatment guidelines.
- Cost-effective care that managed care institutions will endorse.
- Helping clinicians with coding issues.
- Management of illness domains; not always needing to be specific about CFS, but instead helping providers identify patients who present the symptoms.

Committee Discussion

Dr. Willis-Fillinger: Are the materials that you've added to the CDC course information in a different place than the CDC materials? Will you be able to distinguish where your traffic is coming from?

Ms. McCleary I don't think that Medscape provides cross-linking outside of its own site. The company likes to keep people within the Medscape site and refer to other resources there.

Dr. Willis-Fillinger said that, having just referred AHECs to the CDC site, she wondered if the CFIDS Association could track where viewers are coming from. Dr. Miller replied that the NCHM is collecting traffic data and that he could provide that data to CFSAC.

Dr. Hartz asked whether the CFIDS course deals with the heterogeneity of CFS. Ms. McCleary said that yes, it talks about the range of presentation of illness, the co-morbid conditions that are often present, and the help providers need to be more informed about when a condition is exclusionary and when it is an overlapping condition.

Dr. Hartz: What about different types of therapy for different types of patients? Is this presented on the basis of specific symptoms or different categories of patients?

Ms. McCleary: The management side helps providers break down and treat issues such as sleep and pain rather than throwing a lot of drugs at patients and telling them to

come back six months later. We present a more logical, methodical way to take it one step at a time and choose drugs that may be able to address more than one symptom, such as allergies and sleep or alertness and cognitive problems.

Public Comments

Before opening the meeting to public comments, **Dr. Parekh** repeated his announcement that the CFSAC charter has been renewed, then introduced Dr. Jones as the new DFO. He added that the OWH will be providing administrative and management support to CFSAC and noted that gaining program office support is a positive development for the advisory committee.

Desiree Z., *Utah* (commenting via telephone)

I noticed that I was developing chronic fatigue in the fall of 2000. I was 15, loving life, and excited about being in high school. Unfortunately, I was extremely tired, sometimes sleeping up to 20 hours a day. Along with the fatigue, I had tender lymph nodes, body aches, and daily headaches. I ended up missing two months of school due to this condition. I gradually was able to go back to school, but with a lot of adjustments. My doctor at the time had no idea what was wrong with me. Eventually we moved and found my current doctor, who is a CFS specialist, Lucinda Bateman.

Over the past six years, I've had my ups and downs with this illness. There was a two-year period when it seemed the fatigue was going into remission and I was able to attend college. I thought that I was done with my hypersomnia days. But in 2004 my aunt, who I was extremely close to, passed away from kidney failure. The CFS came back accompanied by FM pain. I had mornings where I had to have help getting out of bed because the pain was so bad. I didn't know what was going on. I was a 19 year-old with the body of a 90 year-old. I had to go home in the middle of the semester because I was so sick. I have not gotten my energy back to what it was since 2004.

I am very hesitant to tell people that I have CFS. I chose instead to tell them that I have virus-induced central nervous system dysfunction. I get a completely different response than I do when I say I have CFS. Unfortunately there seems to be negative connotations with the CFS phrase. People don't take you seriously. What if instead of diabetes we called it chronic urination syndrome? That would be insulting to people who have the illness. CFS is a lot more complicated that just fatigue. In my case, I have not only post exertional malaise but digestive problems, muscle pains and aches, issues with my heart such as orthostatic intolerance, cognitive impairment, and the typical symptoms of CFS—sore throat, tender lymph nodes, and headaches. All these symptoms are very common among CFS patients.

My experience with the illness has taught me a lot. I have had many friends and family members who get it and understand the struggles that I have. They are supportive. But unfortunately there have been friends who don't get it and have made some very

ignorant and hurtful remarks. Some people don't even realize that what they're saying is hurtful. I have concluded that a lot of this has to do with the lack of knowledge, awareness, and education there is on this illness. I plead with you to help the CFS community get the word out.

Dr. Bateman recently stated at a CFS conference that there are 2,400 people in the United States with breast cancer. The NIH spent $690 million on breast cancer research. The Susan G. Komen Foundation lists contributions of $242 million, with end-of-year cash of $184 million.

Muscular dystrophy (MD) is classified as a rare illness affecting less than 200,000 of the U.S. population. In September, the Jerry Lewis telethon raised $65 million for the MD Association, $1.2 million more than last year.

According to CFIDS.org, one million Americans are affected by CFS. Federal funding through NIH for CFS was $3-7 million a year. CDC intermural research teams got $5 million a year, which was down from $9 million in 2005. So as you can see, there is not a lot of funding for research in CFS compared to other illnesses, but there are a lot more people who have CFS compared with breast cancer and MD. The bottom line is, we need more research. I hope that one day we can have just as much awareness and research as breast cancer and these other illnesses.

I thank you for your time, and I hope we can get some stuff done.

Mary S., *Delaware*

Thank you for allowing me time to speak here. As I mentioned in my testimony last spring, I lost the experimental drug that had been keeping my biomarkers at bay since 1999—Ampligen, an experimental asymmetrical synthetic double-stranded RNA which I received by twice weekly infusions at Hahnemann Hospital in Philadelphia at a cost of $20,000 in cash a year not paid by either Blue Cross/Blue Shield or Medicare. I have not found anyone from New York City to Washington, DC—all accessible to me because I live near Amtrak—who can give me Ampligen. For the foreseeable future, I have lost all hope that I can get it back.

Before I went on Ampligen, I was found positive for reactivated Epstein-Barr virus, the 37-kDa RNA cell defect, and HHV-6. My disability score was 30, where 0 is dead and 100 is perfectly healthy. After being on Ampligen for six months, the biomarkers and my worse symptoms disappeared. I went off Ampligen in October 2000 with a disability score of 70. One year later I relapsed. I could not get tested for the 37-kDa at the time, but I did test positive for HHV-6. I remained on Ampligen from May 2002-February 2008. I did fine through August.

Since late September, I've had unrelieved symptoms—sore throat, swollen glands, headache, malaise, weakness, and a fever of 98.9. I do not trust myself to drive an

automobile. In September I saw my specialist Dan Peterson and tested positive for chronic Epstein-Barr. I scored very poorly on the VO2 max stress test—I scored a 16. Forty is about normal for a person my age; 20 is about normal for my 86 year-old mother. I also tested positive for high levels of anti-thyroid antibodies. I knew that I had Hashimotos, but Ampligen keeps that at bay too. And for the first time I tested positive for systemic scleroderma. I benefited while at Peterson's from IVs of amino acids, but I haven't found a place in Delaware where they don't think that's crack pot and will let me get it.

[Mary directed CFSAC members to Appendix 1 of her testimony, which was a complete list of her test results. An Internet search of people who have the same profile as she does revealed that she fits almost precisely the profile of the Incline Village outbreak of the mid-1980s, for which the term "chronic fatigue syndrome" was coined. She chose Dan Peterson because of his Incline Village practice.

She next directed committee members to Appendix 2, the tests recommended for CFS patients by the CDC website. Mary said that her results look normal for every suggested test.] At a time when I tested so highly for Epstein Barr, my white blood cell count is perfectly normal. Many clinics and doctors with short time and grumpy HMOs above them will say, "Maybe you have mono—let's see what your white blood cell count looks like." If you go by the CDC's website, I'm not sick.

Appendix 3 is the depression exemption. You get different things depending on where you go on the website. If you go to where they direct professionals, you no longer even get a description of the exemption. I'm excluded from his definition, while at the same time, people with neuroses are included.

My question is, if those of us for whom the name chronic fatigue syndrome is supposed to apply do not fit the CFS definition that CDC is using, then what the heck do we have, and what is this committee doing, and what is the CDC doing, and where are they going? That's what I wanted to say today, and I thank you for the opportunity to say it.

Brian S., *Nebraska*

Some of you may remember my testimony before this committee in May of this year. At that time, I detailed how CFS has plagued my life for over 13 years following a severe case of mono at the age of 15, and how it continues to deprive me of any semblance of a normal existence. This committee has heard of the personal toll that CFS has taken on me, as well as countless sufferers. You have also heard of the financial impact on the American economy and its taxpayers, as well as the reprehensible inaction of the Federal government with regard to research, education, as well as the utter mismanagement of the public health crisis that is CFS.

I will not waste your time, or mine for that matter, speaking about these issues that have already been systematically documented. Instead, I will address the economic burden

that four million Americans must face as individuals, while the Federal government—which we all have ownership of—fails each and every one of us afflicted with CFS.

As you are all aware, individuals with CFS, at times, are unable to work, or their ability to establish as well as maintain gainful employment is severely restricted due to the limitations of living with CFS. In fact, due to the extensive symptom pattern that exists, most if not all of those afflicted with the disease will or have experienced periods where independence is simply an impossibility. No matter how demoralizing the notion is, I am fully aware that as a young man in America, it is not feasible to eventually become or remain self sufficient due to CFS. As an adult, I will likely remain the proverbial adult child who lives with his mother. Although difficult, I have come to terms with this reality as I am sure many of my peers with CFS have as well—it is done out of necessity and undoubtedly without alternative.

Like many others, over the 13-plus years of living with CFS, I have experienced times of financial solvency. Throughout my experience, however, I have learned that these chapters of financial independence are undoubtedly short-lived and almost always followed by a period of relapse—a worsening in the frequency and severity of symptoms often due to overextending oneself just in an effort to meet the standards set by our society as well as corporate America—9-5, five days per week.

Many, including myself, have been faced with the reality that in order to pay for rent, utilities, groceries, etc., no option exists but to absolutely force our bodies to work through the overwhelming exhaustion and pain, all at the physical expense of our health. I personally have experienced this cycle a number of times with the lucid reality that eventually, overextending or "pushing" myself would most certainly lead to a severe worsening of symptoms and eventual state of relapse. But given my situation, I had no alternative.

If I was legally blind, had MS or any other number of disabilities, I would have little difficulty acquiring Social Security benefits as well as other forms of state and Federal aid. Even after the landmark ruling of SSR 99-2p nearly 10 years ago, individuals with CFS are all too often denied benefits and discouraged from obtaining their rightful aid by making the pursuit in itself a battle of attrition designed to wear the patient down through numerous denials, forced psychological evaluations, layers of bureaucracy, and years of waiting in limbo. The process itself is physically, emotionally, and psychologically exhaustive, designed to compel the patient to surrender. And contrary to what the Social Security Administration would have you believe based on their remarks before this committee in May, the process is not becoming easier. It is not becoming faster. It is not becoming more "patient friendly."

Following the launch of the CDC's Public Awareness Campaign in November 2006 CDC stated that they have "documented, as have others, that the level of functional impairment in people who suffer from CFS is comparable to MS, AIDS, end-stage renal failure, and chronic obstructive pulmonary disease. The disability is equivalent to that of some well known, very severe medical conditions." As an individual with CFS who is

currently attempting to navigate through the Social Security Administration labyrinth, I can tell you first hand that it is indeed a battle of attrition.

Often times, if we are fortunate, our families sustain us financially. In the past, my parents have been extremely supportive and were able and willing to provide for my food, shelter, medical costs, etc. More recently, with the recent death of my father, it has become more difficult for my mother to assist me financially. Because I cannot work full time, I do not qualify for employee sponsored health care plans. Because I have a pre-existing condition, insurance carriers will not extend coverage to me. Currently I receive health insurance through a state program entitled Comprehensive Health Insurance Pool, or CHIPS, intended for "high-risk pool candidates." As a 29 year-old non-smoker, my health insurance premium alone is nearly $340 monthly, which excludes deductibles, co-pays, etc. My monthly costs for health care, including prescription coverage, are more than $900, or nearly $11,000 annually. Remember, these costs are directly related to my medical care and do not include various indirect costs.

If I did not have the support of my mother, I would not have the basic necessities for living. And I am not alone—I have heard countless accounts of stories that mirror mine. Of those individuals who are fortunate enough to get a proper diagnosis, the CFS patient community heavily relies on friends and family for economic assistance. As I stated previously, we would much rather lead "normal" lives and be contributing members of society. Trust me, based on economics alone, I would gladly accept that alternative to the possible pittance that I may eventually receive in the form of Social Security benefits. I know my capabilities, and any sort of Federal or state aid will come nowhere near what my utility as an employed citizen is financially worth. To put it bluntly, I have no expectations of becoming wealthy through Social Security benefits. Again, I am not doubtful that those who are in similar positions would agree with my sentiments as well, yet the shackles of CFS are often too difficult to break free from.

In 2004, it was estimated that the costs associated with having a family member ill with CFS is approximately $20,000 per family per year. Before this committee in May 2008, representatives from the Social Security Administration presented the Ticket to Work program, which is a polite way of urging those with CFS who already receive benefits to "transition" into employment which, according to my understanding, would severely jeopardize the benefits that they were fortunate enough to be "awarded" in the first place. Programs like this are not only fundamentally flawed due to the nature of SSA's disability design, but honestly are an insult to individuals like myself who are unable to sustain work and, in my opinion, are yet another waste of taxpayers' money.

I could continue on about the many issues facing the CFS community but unfortunately, I am fairly certain that most of the members of this committee are already aware of them. While the CDC's CFS program obviously has major flaws, so too do many other arms of government. Individual are suffering as a result of CFS, not just physically, but financially as well. I urge you to explore the backlog of SSA disability cases, the rate of denials pertaining to CFS, as well as the amount of time it takes for an individual to

actually receive benefits. Because until that day comes, not only do I wait, but four million other Americans with CFS wait with me.

Caroline F., President, *Wisconsin CFS/ME Association*

Many of you here are probably familiar with Pat Fero, our executive director. She was unable to come today, but we wanted Wisconsin to be represented at this meeting, so I'm here. I had carefully arranged my testimony and knew what I was going to talk about until I started hearing what was going on at yesterday's meeting and the public comment yesterday. That throws most of it out the window.

The cards that you see here are enlargements of post cards. We sent a mailing out to our members. About 350-400 cards went out along with an explanation of CFSAC and what it does. We asked our membership if they would like to attend committee meetings but were unable to do so, if they are interested and would like to watch a tape or web cast if it is available, if they are not interested, and if they would like to make any other comments.

Given the illness of our population and the number of cards that we sent out, I think that getting 81 back is an amazing response. What we originally planned to do was to place enlarged cards on seats in the public seating area. But I really like the color photos of people much better (CFS patients who wanted to attend but are too sick to do so).

To summarize my comments and make the point better, there are 50 seats here in front of you. Add another 26 for the people from Wisconsin who would be here if they were able, but they are too sick; can't afford to come here; or can't plan to be here over a two-week period of time because the planning is difficult, there are no low-cost flights or hotels, etc. There were a few people who said that they were not interested, but that was because they were so ill that they didn't think they would comprehend the proceedings.

Reading from responses:

"I am unable to dress on most days and it would be unprofessional for me to attend the meeting in my nightgown."

"How could I not be interested in something that affects me every minute of every day?"

"I do understand how important this government-level recognition and research is to advocacy."

What people would really love to have is a web cast of these proceedings. They can't plow through all the pages of the minutes and it's a lot less effort to listen and watch a meeting than to try to read the proceedings. I think that would be a reasonable

accommodation because I understand there are expenses, but I don't think they're prohibitive.

At any rate, in light of the comments yesterday, other topics are more appropriate:

- Pat Fero and I are both familiar with much of the research and attend the IACFS/ME meetings. We've been concerned for some time about the difficulty of determining how much CFS money is spent and what it's spent on by government agencies. Pat has done a lot of work under the FOIA, which is very tedious and should not be necessary if government were as transparent and open as it should be. As a lawyer, I would think that this committee would recommend that the Secretary bring transparency and fiscal factual information to this area. I've heard that there are barriers to releasing this information, but if there's so much available through the FOIA, then it seems to me the Secretary can certainly organize and present it to this committee.

- Certainly as important is the question of priorities. I believe this committee should be recommending research priorities to the Secretary. I agree with Dr. Glaser that biomarkers and etiology are very important, which is by no means intended to denigrate other fine and needed research. Viral and other microbial connections must be investigated and we need to settle on one definition of CFIDS or expect to gain little from CDC research for the next 20 years.

- We need to know the risk of cancer, heart disease, and other apparent consequences of CFIDS/ME. This is a life and death question for many of the sickest people.

- I would also urge adoption of many of Suzanne's suggestions.

- This committee is knowledgeable and concerned. Please tell the Secretary that you think this needs to be done. I've looked carefully at the charter and it seems to me that's what the charter tells you to do. There's plenty to be done but we need leadership that sets priorities and informs the public what this government is or is not doing for them with taxpayer money designated to help CFIDS/ME patients. I humbly beg you and arrogantly push you because attorneys try to convince and push. I don't think you need convincing, but I'm pushing you to provide the leadership on priorities under the charter and tell the Secretary what the CFIDS community really needs. I think you know what we need and it needs to be made clear to the Secretary. Hopefully it will go from there. I urge the committee to follow the charter and be very definite with the Secretary.

In May there was a recommendation that CDC's external peer review process evaluate CDC's establishment of research priorities. I think that's great, but it seems to me that what the charter says this committee is about is that this committee itself establish priorities for research. Whether this affects the CDC or NIH is another question, I

realize, but that's how I read the charter. I would urge you to take action because there are a lot of sick people waiting for you to help us.

Lisa B., *North Carolina* (testifying via telephone)

I am a social worker located in Western North Carolina. I am the parent of a 16 year old teenager who has been ill with CFS for five years. His illness began after a severe sinus infection in 2003. He was diagnosed in Chapel Hill. Like most, we were told to give it the five year wait as doctors knew nothing about this illness and if improvement were to occur it would happen spontaneously.

With the help of Jerry Rice, our local school advocate, we first fought a battle for Ryan's education. The Office of Civil Rights became involved in 2005 and flew two attorneys in from Washington. Yet Ryan's educational issues today remain unsolved. We were forced to withdraw Ryan from school because his health, welfare, and safety come first and none of the physician's medical recommendations were being followed.

With the CFS diagnosis came continued discrimination and lack of any appropriate medical care. Although our family was referred to what was considered to be some of the best medical centers in the United States including Mayo Clinic, Johns Hopkins, Wake Forest, and Duke, the care the Ryan received at these centers was below substandard.

Ryan then waited over a year to be seen by the world's dysautonomia expert. This specialist did not do any diagnostic testing and only placed a stethoscope on Ryan's heart. This after traveling to Ohio and making two overnight stops. That doctor told us that Ryan was so severe that he was in the top five percent of patients he had seen. He also stated that he had never seen a pediatric patient with both dysautonomia and a movement disorder, and Ryan was the first.

For years I tried to understand what was happening; why doctors involved in Ryan's care never even offered the proper diagnostic testing. Today we have what appears to be either a huge misdiagnosis or just CFS at its worst. Although referrals to some of the best medical centers were made, once we got to those centers, we found out that they just don't do CFS. You are doomed from the start. Ryan did not even see a cardiologist until 2006 and this is after experiencing serious blood pressure fluctuations, high and low blood pressure, and chest pains since 2003.

I believe that insurance companies control our healthcare and that referrals are just made so that names like Mayo Clinic, once visited, become your greatest barrier. These large medical centers are what I consider to be the ultimate garbage disposal…with politics playing the leading role.

Doctors are threatened off cases. If they keep a CFS patient, they face serious repercussions from medical boards and insurance companies. We are two hours away

from the CFIDS Association in Charlotte. The Cheney Clinic is 15 minutes from my front doorstep. Ryan's previous primary care physicians, the heart center, and the Children's Center are located in the same office park. The discrimination that we face is horrible. We have no local medical care and are being blocked. We must travel to Charlotte to visit the three medical specialists who I feel are also currently being threatened off of my son's medical case.

My son's $22,000 wheelchair sat in a warehouse for more than a year as first Cigna, then Blue Cross/Blue Shield of North Carolina (BCBSNC) denied a power wheelchair while also denying all access to medical records for more than four years. BCBSNC made a medical decision this year without a medical record in their possession, as Cigna hid records that show they approved Ryan for both a power chair and a manual chair previously in 2004.

We have three attorneys—an ERISA attorney we are paying for out of pocket to fight for our son's wheelchair and two other two attorneys who were hired by a close friend. One is dealing with the Department of Social Services (DSS) malicious report, which has now been open for 300 days with no communication and which we believe was submitted by a local doctor, as we are close to exposing a medical nightmare and his involvement and going public with it. The other attorney is helping in the DSS case, looking at the medical end and the blocking of medical care.

In January 2008, a serious LBBB [left bundle branch block] heart block with right axis deviation was located and in just six months has progressed. The cardiologist is concerned that Ryan may go into complete heart block.

As a social worker and a mother I reached out to some of the best. Those compassionate people include:

- Dr. Julian Stewart since 2005. With his help and guidance I was advised to consult with both a cardiologist and endocrinologist and so I finally obtained the proper evaluations Ryan needed just this past year.

- Pat Fero since 2004. Pat has given our family her assistance more times than I can count. I could not have advocated this far without her. Our greatest barrier is the distance between us.

- Mary Robinson since 2005. Mary, along with the Pediatric Network, provided encouragement and guidance. She continues to fight for parents of children with CFS. Many others also helped.

In North Carolina, CFS can be diagnosed, yet no one faces any repercussions for discriminating against those diagnosed. This includes the medical board, Cigna and BCBSNC, Buncombe County school systems, and any physicians. Many legitimate medical complaints were filed with the North Carolina Medical Board and they sit with

zero assistance or resolution. Until CFS—the illness itself—has safeguards, people like my son will never receive proper medical care.

As I tell our story, my son's medical issues and heart condition progresses—this as we pay attorneys to advocate for us, and yet our home is almost in foreclosure. Our lives have been torn apart and Ryan has been sick for what seems like forever. The doctors still have no idea what is causing his heart problem. Mitochondrial disease is suspected.

Ryan carries a CFS diagnosis. As long as he carries that diagnosis, he will never get the proper medical care that he so deserves. Has CFS become a wastebasket diagnosis as Dr. Peter Rowe stated? Or was it intentionally that and just called CFS?

When we asked for help accessing local medical care, our appointment to speak with the director of the children's medical center was made and involved the presence of the hospital's risk management department—without our previous knowledge.

Our local advocate remains by our side still today and I'm in contact with him almost daily. We are fighting a battle in North Carolina where we have no protections. Senator Dole, Representative Heath Shuler, the Department of Justice, the Office of Civil Rights, the state and national DHHS, and almost every advocacy agency in our state have been contacted with little or no assistance.

The discrimination driven by politics and corruption must stop. Forget educating people—it's the discrimination that must stop. We are trying to do forced learning when I believe we should be attacking discrimination. With those safeguards will come voluntary participation on getting educated on this illness. My son Ryan Baldwin should have rights. Because of the continued discrimination and substandard healthcare, I had to protect our family and therefore have documentation of every doctor's visit in the last four years.

Courtney A., *Virginia* (Courtney is Robert M.'s wife; Robert was too sick to attend)

You heard Robert's story at the last meeting, and on his behalf I'd like to make a few brief concrete recommendations. My husband and I need things to change and we need you to be bold. We believe the committee has an opportunity to make recommendations in this meeting and the next one that could shape a new Administration's approach to CFS. It's an opportunity that doesn't present itself very often and you need to seize it for us. We would ask you to make the following bold recommendations to the Secretary of Health:

1. Earmark or require HHS agencies to budget $100 million in the first two years of the new Administration to CFS research.
    - Require NIH to fund 50 percent of proposals presented to their institutes until they reach a meaningful level of funding for research on our illness.

- Require CDC to provide access to its vast store of data to CFS researchers inside or outside Federal agencies.
- Require FDA to actively solicit applications for new treatments for CFS.

2. Call for two to three centers of excellence to be devoted to CFS and to be Federally funded without delay.

3. Establish an office dedicated to CFS and staffed with people from each of the agencies with a mandate to break down the interagency barriers to making progress on the illness.

CFSAC should make a summary in an organized list form of all of the recommendations that you have made from the last four years that are urgent and that remain unmet so that we in the patient community can advocate in a new Administration and Congress for changes that are backed by the only committee of experts in the government that we have.

I want to thank the members of this committee who have devoted time to making real change for CFS patients. Many of you do heroic work and we are truly grateful. I have no doubt that the people from the agencies sitting at this table will tell you that these are the wrong recommendations. Their job should be to make change to improve patients' lives. After 20 plus years we are still faced with a maze that is purposefully impenetrable. This committee has the mantle of leadership and we would urge you to use it boldly for change and take advantage of this unique opportunity that we have. Thank you.

Nancy M.

Nancy read a series of letters from CFS patients whose quality of life has been vastly improved by Ampligen. "I have hundreds of these at this point," Nancy said. Those living with CFS are urging the FDA to approve the drug as soon as possible so that it can be made widely available. "Patients ask that we at least try to bring some of this to you," she said.

Lolly V.

On July 3, at about 9:30 in the morning, I marked my 23rd year of living with myalgic encephalitis. I brought today the receipt from the memorable visit to the Hong Kong hospital. I, along with more than a dozen of my college classmates, filled two taxis as we staggered away from the buffet line at the Holiday Inn to seek medical attention. It was sudden and the worst flu-like experience I had undergone to that point in my life. Although most of my classmates recovered in a few days, I became profoundly and permanently different that week. As the respiratory infection and fever subsided, I was weak and my thought processes and senses were notably muted.

In the weeks just before this 1985 onset, we'd been traveling to remote areas in China that had only recently opened to foreign visitors. A doctor in Hong Kong told us after viewing our itinerary that we had gone through an area of a known outbreak of something not well understood but most similar to a neural virus. It was affecting primarily Western travelers. It had a scary name, myalgic encephalitis. But most people would recover in a few weeks, he reassured us. If we did not, we'd be at home and could go to our own doctors and tell them what happened.

My primary care doctor at home, my friend, could not find anything physically wrong and said that I was most likely suffering from what used to be called a nervous breakdown. He found a good psychiatrist who I visited for nearly two years. I came to the first visit with a used Introduction to Psychology handbook. I'd carefully highlighted all the pre-existing factors. Finally in 1993, after the urging of a friend and former professor who noticed profound changes in me, I called a fellow China traveler who had just benefited from seeing a doctor in San Francisco. The professor who recommended that I call her did not know the illness or the treatment, and did not know that she and her husband and I had traveled through China together. When I arrived at Jay's front door, she threw her arms around me and said, "You have it too, and nobody else can see it." She gave me a string of alternate names, stacks of *Time* and *Newsweek* articles, and sent me home to Maryland where the diagnosis of CFS found its way into my medical chart.

You would think with 23 years of CFIDS under my belt, I would have a handle on the medical care, appropriate doctors, etc. I have some of the best insurance state employees can buy. My original CFIDS doctor lost his license, another retired, a third did not take my insurance. I found a good lady doctor that did take our insurance, but a year later she joined a boutique group and we were invited to pay an annual subsidy of $1500 a piece on top of the insurance deductible and the $40,000 I had spent a few years before in tests and aggressive treatments.

In 2003, my deepest fear was coming true. I had made a huge recovery, I'd had a long remission, but I was sliding downhill fast and I needed somebody to help me stop the backwards slide. I had been coughing for years and the chronic cough was getting worse. Soon I went back to see a pediatric allergist to whom I had been referred several years before. That trip was to put my health and treatment back onto the forefront of our lives. I have three things to ask of this committee:

- I'd like to have criteria that have the flexibility to recognize the differences between acute onset presentations and long-term disease processes.
- I'd like the creation of Center of Excellence that can continue to provide support, oversight, and coordination of care.
- I'd like to see a mentorship program that can help with finding accommodations so that we can participate more fully in civic, social, and work opportunities.

If I was to give you a list of the illnesses that I was recently diagnosed with, I'd put CFS at the top, although SSA says that I no longer have that. I've been diagnosed with chronic obstructive pulmonary disease and was on treatment for several years with a

couple of drugs to help slow down inflammation of my lungs that caused side effects. In 1998, I was bitten by a Lyme disease tick and was told by NIH that I was the most acutely ill early onset Lyme patient that they had ever seen. They started a new branch of their program. I intermittently lose the use of my arms and legs. Thank you very much for your time and the opportunity to address this panel.

Dr. Ken F., *New Jersey*

I'd like to bring CFSAC up to date on some activities of the organizations that I represent.

- The Vermont CFIDS Association has been given a grant from PANDORA [Patient Alliance for Neuroendocrineimmune Disorders Organization for Research and Advocacy] to establish a medical student scholarship, and that program is underway.
- We received a letter from the Vermont director of public health indicating that he thinks the scholarship is a wonderful idea and that this is a direction in which we should continue going. We would like to spread the idea of medical school scholarships to other states.
- The New Jersey CFS Association, which just held its fall physician/patient conference, has awarded its third medical student scholarship. The program has now been going on for three years.
- There was a concern because the New Jersey program runs through all three medical schools in the state, which are under one umbrella of the University of Medicine and Dentistry of New Jersey. The concern is that there's going to be a fourth medical school which is going to be private. I have spoken with the dean of education of that school and he has agreed to participate in the program.
- A brief comment about the need for biomarkers as a requirement for CFS to be legitimized: At the end of our annual physician/patient conference when the panel is brought forward and asked questions about their presentations, I included a question to the conference moderator, who had no experience with CFS prior to moderating this conference. I asked him, "What is your opinion of CFS?" He answered that CFS is not an illness that is unique in having no identifier for it. He said that it reminds him of heart failure. We really don't know what causes heart failure but that doesn't mean that it cannot be treated and it doesn't mean that it doesn't have the medical community's respect.
- From PANDORA – we have just had a meeting with in Miami with Miami-Dade Community College. We have entered into an agreement to provide them with educational learning modalities for their physician assistant, nursing, and physical therapy programs. I don't know if it's true, but the people we met with said that the college has the largest nursing school in the United States, graduating 600 nurses a year.

The request I have for CFSAC: When we bring to this committee the initiatives that we are undertaking throughout the United States, we don't get any feedback. We don't

know whether our programs meet your approval, we do not know whether we should continue to pursue them. At the last meeting here, I brought to your attention the fact that six or seven programs within CDC and NIH could rotate medical students through at no additional cost. It would be appreciated if CFSAC would give us some feedback to tell us what it is you think we are doing right, what you think we are doing wrong, or whether you think we should be going to other places to try to fund our activities. Thank you.

Marly S., *PANDORA*

Marly updated CFSAC on PANDORA activities:

- We continued grassroots efforts in collaboration with other organizations like the American Pain Foundation, which resulted in local television exposure on ABC Channel 10.
- We have also continued to push other partnerships with other organizations in Florida. We're now joining forces with Lifeline Inc. to create a nationwide coalition in the states of New Jersey, Massachusetts, Texas, Illinois and Florida in addition to the other states with which we have been collaborating.
- A partnership with Miami Dade Community College, which happens to be my alma mater, will result in college programs being promoted through PSAs and local TV and cable.
- We are participating actively in community outreach programs with the religious interfaith communities in South Florida.
- We are supporting a new highly interactive website that is patient-driven called CFSknowledgecenter.com. Dr. Friedman and I are members of the board of directors for the website.
- We are bringing in a group of CFS physicians on December 13 in a highly interactive presentation where patients are going to drive the presentation.

We are providing grants for numerous scholarships and research projects. These include:

- Grants for medical scholarships to the Vermont CFIDS Association, the IACFS/ME and a grant to Dr. Nancy Klimas for her research.
- A three-year grant to DePaul University for their student initiative.
- A scholarship to Cort Johnson to attend the HHV-6 Foundation Conference.
- A scholarship to Dr. Lena Garcia, a Colombian physician who has successfully obtained a green card under the national interest policy because she is interested in treating CFS.
- A grant for a researcher at the University of Alberta Canada pediatric medical school.
- A grant for quality of life advocacy to assist CFS patients at home.

One suggestion – would you consider giving the public three to five more minutes a piece to speak before CFSAC, especially when they come from out of state at great cost and at great personal sacrifice? Thank you.

[Dr. Parekh called a working lunch break for CFSAC Subcommittees]

Committee Discussion

Dr. Parekh opened the committee discussion during which members explored:

- The direction that each subcommittee will take and what members want to focus on in the next six months.

- CFSAC recommendations to the HHS Secretary.

Quality of Life

Ms. Artman introduced the subcommittee's two main recommendations, which were formulated before the meeting:

- The first recommendation is based on the CFS providers toolkit. The subcommittee wants a toolkit to be created for patients. The CFIDS Association did a great job with their provider kit, but there is still a need for a patient toolkit.

- The second recommendation is based on the ongoing conversation about how to improve patient access to CFSAC meetings, including via web casts and pod casts. Ms. Artman explained that web casts must be ADA-compliant, which requires closed captioning and other costly accommodations needed to ensure that the meeting is accessible to everyone. As an alternative, the subcommittee recommended contacting the list of 800 known patient advocacy groups by email or snail mail to explain CFSAC's purpose and invite them to participate.

Dr. Snell introduced two additional subcommittee recommendations—one proposing that the CDC peer review panel evaluate CDC third party contracts for logistical support of research projects, and one proposing to solicit the Department of Education's cooperation on issues relating to pediatric CFS.

Dr. Hanna commented that there is no need to make a recommendation to the Secretary about DE cooperation because Dr. Jones already has plans to meet with Education Department staff and has already agreed to introduce the topic. **Dr. Jason** agreed. Dr. Snell suggested that since DE has not responded in the past to informal contact, a recommendation from the Secretary might add gravitas to a future request.

Dr. Jones said that the time will come when DE must be approached through the proper channels, but that these channels could change over the next three months. She said that she could start the process informally the next day when meeting with some relevant DE staff. She could then determine what the right steps are, get a sense of how important the issue is, and share the stories that were presented throughout the CFSAC meeting. "I think the Education folks would be appalled just based on what I have seen from sitting in those disability meetings and the mental health transformation meetings," said Dr. Jones.

She did not think that a recommendation to the HHS Secretary about DE cooperation would be redundant "if that's the committee's decision. I think it can be helpful. If nothing else, it may help us in our transition documents in presenting this up our food chain that this is what we're doing and why."

CFSAC members voted unanimously to pass the following draft recommendations, with editing to follow:

Recommendation (PASSED UNANIMOUSLY): *CFSAC recommends that the DHSS Secretary solicits the Department of Education's cooperation on issues relating to pediatric CFS.*

Recommendation (PASSED UNANIMOUSLY): *CFSAC recommends that the DHHS contract with a third party vendor, be that the CAA, IACFS/ME, or other organization, to develop a CFS Tool Kit for patients and caregivers of patients (something similar to the CFS Tool Kit for Providers.). This should contain information pertinent to diagnosis, treatment, and a detailed list of tools for CFS patients.*

CFSAC members then discussed the remaining two Quality of Life Subcommittee recommendations.

Recommendation (WITHDRAWN): *CFSAC recommends that the U.S. CFS Support Group and Organization Community be sent an email or, when no email is available, a postal letter informing them (one time only) about the CFSAC, how to access the minutes online, and how to participate during the public comment portion of the meeting. The reasoning behind this is that many in the CFS patient community still do not know what the CFSAC does. Also, in lieu of web casts or other such expenses to reach out to the patient community, this will invite those same people to participate during the public comments portion of the meeting and give them access to the minutes.*

Dr. Parekh asked whether the subcommittee had email addresses for all of the advocacy groups. Ms. Artman replied that she was still collecting them with the aim of having an email for everyone within the next several months. Dr. Parekh said that the list is a great resource and that CFSAC can get in touch with the groups, but a recommendation to the Secretary is not necessary to do so. Ms. Artman withdrew her recommendation.

Dr. Jones brought up the issue of the comfort that people with CFS would feel in the government having their email addresses. In being sensitive to those who may not be comfortable with that, an alternative might be an open letter that the advocacy community helps disseminate as a third party. Ms. Artman said that she was considering sending out an email on her own, but wondered whether her action would overstep a boundary and be more appropriate if done through DHHS.

Dr. Jones said that the email may not be appropriate for a recommendation to the Secretary nor an action that should be taken by an advisory committee member, but CFSAC could identify second or third party channels that are appropriate. "We should find ways to make sure that everyone out there knows about this committee and how to access it, and I think that's the core point."

Dr. Jason: I think the discussion that was really important that has happened at many meetings is the extent to which we can make these meetings public so that folks can hear about them when they can't get here. This is really a strong interest among the patient community and shared among committee members. We don't need a motion on this, but I think it's something that we're going to communicate to you and maybe behind the scenes you can investigate the logistics of whether something like that can be possible.

Dr. Cavaille-Coll: We received this big package that has all of these 800 names. I've looked through it and I think that the first thing I'm going to do when I get back to the office is put it in the shred box. I don't think that these people know that this was given to FDA and I think that they would be very sensitive about this. It contains lots of information that is probably more private since it is their home addresses and their cell phone numbers, which are probably not the types of things that they would necessarily concede that government officials should have at their disposal.

Ms. Artman: This information was gathered through public online searches. It is on a public domain somewhere. I completely agree, people probably don't realize what it means when they put something on the Internet, so I appreciate that, Marc.

Dr. Cavaille-Coll: I do agree. I think that many people post things on the Net and do not realize what can happen to it afterwards. I don't give my address to anyone on the Net unless they're from very secure organizations and they have a document that says what their privacy rules are.

Dr. Jones: Another issue is, if this were seen as a formal activity of the advisory committee—and you all are special government employees—then some reasonable person might ask, "Did the government collect this information?" And then we would be in hot water with the gurus who manage the government's public burden rules and regulations. While the action would be done with good intent, first and foremost it's respecting the individual's right to privacy and second of all, it's how that information reaches the government. It does not appear to be the case that this information was collected by an advisory committee member, but I would not want to give that

appearance. We want those advocates' voices and we need those perspectives, but let's identify other ways we can do it.

Recommendation (PASSED UNANIMOUSLY): ***CFSAC recommends to the Secretary of Health that CDC's external review process evaluate CDC's use of third party contracts for provision of logistical support for research projects.***

Dr. Mitchell: I doubt that the recommendation would get to the Secretary before next week's review panel. I also think that the content of the recommendation is already part of the review process, although I don't have the details with me.

Dr. Klimas: A list of all of the CDC-appropriate CFSAC resolutions should be made up for the peer review panel so that they know that this committee has raised these concerns and can take them into consideration when they're doing their review next week. A year ago there was a really lengthy discussion of the CDC and there were some very particular points brought up.

Dr. Parekh said that he would ensure that all CFSAC recommendations concerning the CDC over the last several meetings would be collated for the CDC panel adding, "I think that it would be helpful for the peer review group." Dr. Mitchell said that he would see that the panel chair receives the recommendations.

Ms. Healy raised a concern about the following CDC-related recommendations passed in May 2008 (they appear in their entirety on page 106 of the May 2008 minutes):

CFSAC recommends to the Secretary of Health & Human Services that CDC's external peer review process focus on the program's progress on provider education, the search for specific diagnostic biomarkers and the identification of CFS' etiology; evaluate CDC's use of expertise outside the agency; and evaluate CDC's establishment of research priorities.

Ms. Healy noted that the charge to CDC's external peer review committee—as presented by Dr. Monroe the previous day—covered the agency's broad research mission and goals. She expressed concern that CFSAC's more detailed recommendations would get lost in the broader review process. Dr. Mitchell again reassured members that he would deliver their collated recommendations.

CFSAC members passed the recommendation unanimously despite the fact that it would not reach the DHHS Secretary before the CDC external peer review begins. Dr. Klimas noted that it "will be on the list of things that we've recommended that the new Secretary will be presented at some point. There will be at least a shopping list of things that have and haven't been done yet." Ms. Wiley again assured the committee that this and previous CDC-related recommendations would be transmitted to the external review panel.

Education Subcommittee

Recommendation (PASSED WITH ONE NEGATIVE VOTE): *CFSAC recognizes that much can be done to ensure that every child has the best possible access to support and treatment and asks that the Secretary facilitate a taskforce or working group to establish an ongoing intra-agency and inter-departmental effort to coordinate school, family, financial, and health care support for children and young adults with CFS.*

Dr. Klimas gave the background for the recommendation. She pointed out that when CFSAC requested that SSA attend committee meetings, it resulted in a change of agency policy that benefited those with CFS. She noted, however, that giving an agency *ex officio* status does not always have such an effective result. The subcommittee discussed whether it is possible to compel organizations such as the Departments of Education, Labor, and HHS to coordinate their efforts for the better of citizens with CFS. She noted that the previous day's presentations on pediatric CFS underscored that fixing just the healthcare, education, or financial component is not enough, but a coordinated effort "is extraordinarily effective. How do we get that kind of coordination?"

Dr. Parekh said that some agency coordination occurs through Executive Order or Congressional mandate, but that a lot of cooperation happens in an ad hoc fashion. There are many ways that CFSAC could go about encouraging it, including inviting other departments' representatives to participate in subcommittee meetings and phone calls. Dr. Snell commented that agencies and CFSAC members often discover areas of coordination during an agency's appearance before the panel.

CFSAC passed the recommendation to express strong support for agency/departmental coordination recognizing that the details of such coordination remain to be fleshed out.

Recommendation (PASSED UNANIMOUSLY): *CFSAC recommends that the transition report informing the new Secretary include the background of the CFSAC and CFS, and a list of the recommendations that have been developed by this committee over the past two chartered periods with any action taken on each point.*

Dr. Parekh assured members that the transition report will include such information for the past two years without a CFSAC recommendation. Drs. Cavaille-Coll and Hanna, who have served on CFSAC since its inception, concurred that going back two years was sufficient and that delving back further might result in including recommendations that current voting members might not agree with.

Committee members noted that without a formal recommendation, it is not assured that someone would go through past minutes, extract all recommendations, and determine whether or not they had been acted upon. CFSAC would like to be sure that the recommendations that the committee has made that have not been acted on are still at the forefront under the new Administration and do not get buried in the transition.

Members did not want to leave it to the discretion of a transition staff whether or not the Secretary receives the information, which could also be placed on the CFSAC website. Dr. Snell added that the committee deserves an explanation from the Office of the Secretary about which recommendations were acted upon and why.

Dr. Jason requested that some future CFSAC meeting include a discussion of the actions taken on prior recommendations. He said that the recommendations on Centers of Excellence and a possible SG conference and report are two particularly important CFSAC initiatives, and the committee deserves an explanation about why they have not been acted upon.

Recommendation (PASSED UNANIMOUSLY): ***CFSAC endorses the planned State of the Knowledge Conference to be developed by the NIH.***

After hearing the advice of Dr. Hanna, CFSAC members decided to exclude from the recommendation more detailed suggestions that included involvement by other government agencies and creating CMEs based on conference topics.

Research Subcommittee

The Research Subcommittee had no recommendations for CFSAC consideration, but addressed several issues:

- The panel applauded CDC representatives' openness and willingness to share financial details over the last six months.

- The panel applauded a new kind of relationship developing between NIH and CDC that fosters cooperation between the two largest funders of CFS research in the United States.

- The panel feels positive about initial discussions with Dr. Kitt concerning peer review with the idea of having some possible alternative mechanisms for reviewing CFS special emphasis proposals that would allow more specific expertise for those proposals. The subcommittee is aiming to come back in six months with progress to report.

- The panel wants maximum involvement in planning the CFSAC agenda. The panel would like to have a committee discussion about how agendas are created and recommend that they include potentially 50 percent fewer items. This would make meetings more manageable and allow for delving into subjects in depth. CFSAC could think more closely about what it is doing, what it is accomplishing, what has been done in the past, and what corrective actions are needed. The subcommittee believes that it is important for CFSAC to pass recommendations, but it is even more important that those recommendations be implemented.

The subcommittee found wide support for the suggestion to make meetings more manageable. Other members agreed that meetings that are crowded with topics and public testimony end with literal races to finish recommendations. Recommendations are not as well crafted as they could be, so they do not make their case as well as they might. If CFSAC is to move forward with bold ideas, as CFS patients are advocating, committee members agreed that they need to spend more time working out the issues.

Members discussed how the most effective meetings seem to be thematic ones where the subject is picked out ahead of time, members conduct educational sessions with experts both before and during the meeting, then take part in focused discussions and make precise and clear recommendations about the topic. The public could be asked to comment on the topic of the day, although they would also be free to discuss other concerns. Thematic meetings would also not preclude CFSAC discussion of other ongoing issues, and such a discussion at the end of each meeting could be used to set the next agenda.

CFS and Employment

On that note, Ms. Artman requested that the next meeting theme be employment, including discrimination in the workplace, the decision to leave or return to work, the barriers to returning to work, disclosure by CFS patients of their illness, and comments from patients and employers on what is and is not working.

Dr. Jason said that at some point, CFSAC should reflect on what it has accomplished and how comfortable members are with the accomplishments. He noted that some outside the group see it as making a lot of recommendations without seeing many of them get acted upon. Dr. Klimas suggested that each subcommittee go through its resolutions over the last two years to see what has been accomplished and be ready with a report for the next meeting.

The committee paused in its planning to join Dr. Jason in recognizing the “tremendous stewardship” of Dr. Parekh over the past two years. Dr. Jason said that he has loved coming to the meetings and participating in the intellectual dialog and that Dr. Parekh has set a tone, along with Dr. Oleske, to let voices be heard and let CFSAC members know that they are appreciated.

CFSAC members applauded Dr. Parekh as well as the OPHS Committee Management Officer, Olga Nelson for their support of the committee.

Dr. Klimas noted that the major obstacle to returning to work is the disease’s pattern of relapse due to overexertion. This creates issues such as flexible work places, how ADA provisions are applied to a person with CFS, etc. She emphasized that getting the right players before CFSAC is key to the meeting’s success.

Dr. Desi noted that government is not the only player. Private industry and disability are also involved. The functional consequences of CFS also impact students and those who work in the home taking care of children. He said that he does not think that SSA gets involved in work issues beyond what was presented at the May 2008 meeting about the Ticket to Work program, although he would investigate the topic further.

Dr. Snell said that ADA and how it affects multiple areas such as employment, school, and higher education may be a topic for a whole separate meeting.

Other areas suggested for a meeting with an employment theme included:

- Brainstorming about how to change the systems already in place to accommodate the unique and specific barriers to employment raised by the waxing and waning nature of the disease.

- Whether any CFS patient has ever successfully returned to work and gotten off of Social Security Disability.

- A discussion by experts about exactly what employers can do to comply with ADA and accommodate people with CFS.

- Exploring how to evolve successful CFS rehabilitation techniques into employment policies. The discussion should include private disability insurers whose case managers have expertise in moving from disability to employment.

- The experience of people with other diseases who have run up against similar barriers and have successfully overcome them. Dr. Desi commented that other diseases such a MS, epilepsy, schizophrenia, and COPD are either episodic in nature or are met with prejudice by the lay public and medical profession.

Dr. Parekh confirmed that the Quality of Life Subcommittee would take the lead in planning a meeting on the topic of CFS and barriers to work, taking input from other interested members. In a parallel effort, each subcommittee will review its recommendations from the past two years and report on whether or not any action has been taken. This would facilitate a full committee discussion about any further actions that CFSAC may want to take.

Dr. Klimas reminded CFSAC members about the IACFS/ME meeting in Reno in mid-March and directed them to the website for more information. Members discussed coordinating a CFSAC meeting with the IACFS/ME conference, noting that the committee would have access to conducting business before a much larger patient group and get to see advances occurring in the field. The problem of budgeting for the trip was raised as a potential barrier.

Dr. Parekh thanked CFSAC voting and *ex officio* members for “getting some good work done” and members of the public for their contributions and patience.

Dr. Hanna again thanked Dr. Parekh for “running two years of wonderful meetings, making sure that we all got along well and cooperated and achieved things” and looked forward to starting to work with Dr. Jones.

Adjournment