



# American Academy of Environmental Medicine

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April 13, 2009

Federal Coordinating Council for Comparative Effectiveness Research  
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Honorable Members:

The American Academy of Environmental Medicine (AAEM) is an independent, not-for-profit medical organization established in 1965, dedicated to the prevention, identification and treatment of adverse human health effects from environmental hazards, especially chemical and biological agents found in air, food, water and consumer products, as well as various types of radiation ([www.aaemonline.org](http://www.aaemonline.org)), since "virtually all human diseases result from the interaction of genetic susceptibility and modifiable environmental factors."<sup>1</sup>

Composed primarily of traditionally-trained M.D. and D.O. physicians from many specialties, the principal goals of the AAEM are physician education and the expansion of medical knowledge about often-overlooked effects on human health of environmental exposures encountered in everyday life<sup>2</sup>.

Indications are that the current Washington administration will move toward a significant restructuring of health coverage, records, and payments. **AAEM believes that the comprehensive nature of the Environmental Medicine approach to patient investigation and care, which encourages and educates for effective, ongoing patient self-management, offers valuable, cost effective options for health care providers, patients and insurers.**

As such, this communication is intended to highlight some of our specific concerns for the *Federal Coordinating Council for Comparative Effectiveness Research*.

✚ Traditional medical training has taught all physicians, including AAEM members, to recognize patterns of symptoms and signs that point to laboratory or radiographic testing to assist making a diagnosis and then to apply treatment algorithms to provide relief. For acute conditions, this strategy has worked relatively well, and the population has been living longer.

Since World War II, when there was a rapid increase in production and use of synthetic chemicals in the U.S. (now about 80,000 in number)<sup>3</sup>, chronic environmentally-linked illnesses have been on

the rise, including allergies<sup>4</sup>, asthma<sup>5</sup>, and chemical sensitivities<sup>6,7</sup>. The estimated cumulative annual social and economic costs in the U.S. and Canada are between \$568 billion and \$793 billion for a range of chronic diseases in adults and children that are considered likely to be environmentally caused<sup>8</sup>. It has been estimated that \$54.9 billion is spent annually on environmentally induced conditions in children, \$9.2 billion for certain neurobehavioral disorders (intellectual deficits, autism and cerebral palsy), \$43.4 for lead poisoning, \$0.3 billion for childhood cancer and \$2 billion for childhood asthma, all thought to be low estimates<sup>9</sup>. Adverse environmental health effects are often multi-system in nature, which may not fit familiar disease patterns<sup>10</sup>, may be missed, and, although often remediable with environmental modification, may not respond to usual medical/surgical treatments, further driving up health costs.

The World Health Organization defined health as a complete state of well-being, not just the absence of disease or infirmity<sup>11</sup>, and recognized there are multiple determinants of health<sup>12</sup>. **Multiple health determinants and complex gene-environment interactions must be recognized and physicians educated on how they may assist each of their patients to meet his or her specific nutritional, hormonal, and psychosocial needs to function optimally, and how to minimize exposures to environmental toxins that could block function.**

- ✚ 'Comparative effectiveness' research can be valuable to determine the efficacy of one treatment method versus another in randomized controlled clinical trials with highly selected groups of subjects, but the results cannot be generalized to all patients with the condition of interest. Clinicians know that a '*one-size fits all*' treatment approach does not work at the individual level because of the complexity of interaction of genetic and environmental factors for each person. **The rights of physicians to practice medicine according to their best judgment must be preserved.**
- ✚ Because each person is unique, patients' needs and preferences in regards to diagnostic tests and treatments must be respected, and good clinical judgment applied, not relying solely on population-based research results. Study results ought not to be used to limit access to therapeutic options as has happened in Great Britain, where, for example, limited comparative effectiveness studies led to National Institute for Health and Clinical Excellence (NICE) guidelines that declared that cognitive behavioral therapy and graded exercise therapy were the most effective methods for treating Chronic Fatigue Syndrome/Myalgic Encephalomyelitis, and British patients with this condition have had difficulty getting access to medical treatments other than these two that have been "approved". Gibson et al conducted a survey of 917 Americans with self-reported chemical sensitivities, which revealed they had tried multiple combinations of 101 treatments, and reported widely varying degrees of effectiveness<sup>13</sup>. **The rights of patients to have access to a range of treatments of their choice must be maintained.**
- ✚ Dating from Rene Descartes, a 17<sup>th</sup> century French philosopher, there has been division of the body and mind with respect to disease causation<sup>14</sup>, with the etiology of medical conditions deemed 'physical' when some structural or functional impairment is evident on physical examination or objective testing, or 'mental', when there has been no obvious consistent pattern of physical findings or test

results. Generally the treatment of disorders designated 'physical' has been limited to medications or surgery, and those designated 'mental' to psychotherapy and psychotropic medications.

Interpretation of guidelines emanating from comparative effectiveness research has sometimes been used to discriminate against patients with particular diagnoses. For example, in Great Britain, some insurance companies have interpreted the NICE guidelines as a government classification of Chronic Fatigue Syndrome/Myalgic Encephalomyelitis as a psychiatric condition, and then used that as a justification to limit health care coverage and disability awards for that diagnosis. This is of particular concern because historically we know that certain illnesses have been classified as 'psychological' in nature, until the real physiological cause was found. Tertiary syphilis, lead poisoning, vitamin B<sub>1</sub> deficiency and celiac disease<sup>15</sup> are classic examples. **If the physiological mechanisms for clinical conditions are not fully understood, no assumptions should be made about their etiology that limit health care coverage. Functional status, not diagnosis, should determine disability awards.**

- ✚ Labeling illnesses in a reductionistic, Cartesian manner can be very harmful to patients. For example, patients, such as those with environmental sensitivities, vary from the traditional patterns of symptoms, signs, and test results, and they have been, and may continue to be relegated to the 'mind' side of the outmoded dichotomous etiological model with highly negative consequences. For example, environmentally sensitive patients who are tagged with "mental illness" diagnostic labels such as "somatoform" or "somatic distress" disorders tend to be blamed for their health problems<sup>16</sup>, to be denied choice in treatment modalities as if they were incompetent, or even forced by insurers (to retain benefits) to take therapies that have been repeatedly reported as harmful while being told there is no need for avoidance of symptom-triggering agents or for workplace accommodation. When no longer able to work, income support has been denied. Gibson et al's survey of 917 people with self-reported environmental sensitivities found that both "*Chemical-free living space*" and "*Chemical avoidance*" showed huge help:harm ratios of 155.2:1 and 118.6:1, respectively. In contrast, there was a help:harm ratio of only 1.4:1 for "*Psychotherapy to cure MCS*", whereas "*Psychotherapy to cope with MCS*" and "*Support Group*" had help:harm ratios of 6.0 and 8.7, respectively. Furthermore, of the thirteen treatments reported '*more likely to harm than help*', the top seven were psychotropic medications such as antidepressants and tranquilizers<sup>13</sup>. This may be because those with chemical sensitivities are more likely than those without to have genetic polymorphisms that impact on their ability to metabolize certain chemicals, including drugs<sup>17,18</sup>. Complex physiological changes have now revealed that chemical sensitivity is not a 'psychological reaction' to chemicals<sup>19, 20</sup>.

Similarly, the Research Advisory Committee of the Veteran's Administration recently concluded that many of the symptoms reported by veterans of the 1991 Gulf War were *not* related to post traumatic stress disorder (PTSD), but to the overlap of chemical exposures, which previously had not been adequately evaluated<sup>21</sup>. About 25% of these Gulf war veterans had disabilities and symptom patterns of chronic fatigue, fibromyalgia and chemical sensitivities.

This tendency to persist with harmful mislabeling of illnesses as “mental”, “psychological”, or “psychiatric” in origin, even in the face of contrary evidence, is particularly concerning given that the American Psychiatric Association is updating their Diagnostic and Statistical Manual to the 5<sup>th</sup> edition (DSM-V), and is re-writing the section on “somatoform disorders” to be more inclusive. The DSM-V will then be “harmonized” with the World Health Organization International Classification of Diseases, 11<sup>th</sup> Edition (ICD-11). **Physicians need to consider potential environmental causes of symptoms or more harm can result, especially if medications are used that suppress symptoms, rather than addressing the underlying contributors to illness. The broad-based WHO model of multiple determinants of health should replace the incorrect and outmoded dualistic ‘physical’ versus ‘mental’ model of health in restructuring health care.**

To summarize, AAEM encourages the Council and the government to follow the suggestions in bold type above, and to recognize that **the everyday physical environment, encompassing the air we breathe, the food and water we ingest, and the dust and consumer products we contact, constitutes a key health determinant.**

Thank you for the opportunity to contribute to this consultation.  
Yours truly,

A handwritten signature in black ink that reads "J. Armstrong". The signature is written in a cursive, flowing style with a long, sweeping underline that extends to the right.

Jennifer Armstrong MD, FAAEM, BIBEM  
President, American Academy of Environmental Medicine

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- (12) **Figure 1** Source: World Health Organization, undated, from *Child Health and the Environment- A Primer*, Canadian Partnership for Children's Health and the Environment, August 2005:5, [www.healthyenvironmentforkids.ca](http://www.healthyenvironmentforkids.ca)
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Figure 1

