The Medical Society Consortium on Climate and Health Sounds the Alarm on Health Impacts of Climate Change

By Mona Sarfaty, MD, MPH, FAAFP, Executive Director
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Most Americans cannot name a single health effect from climate change; nevertheless, U.S. physicians are providing medical care in their offices every day to people who are experiencing health problems caused or aggravated by climate change. Specific conditions identified as related to climate change include heat illnesses, aggravated allergies, injuries caused by extreme weather, lung problems due to wildfires and ozone, tick and mosquito borne diseases, and mental health conditions brought on by evacuation to avoid flooding or extreme weather conditions. Twenty medical societies representing 550,000 physicians -- over half the physicians in United States -- have joined together to start a new group, The Medical Society Consortium on Climate and Health, with the mission of informing the public and policymakers about the health harms of climate change and the health benefits of climate solutions. In March 2017, the Consortium released a report called Medical Alert! Climate Change is Harm- ing Our Health (Medical Alert!).

The Medical Alert! report provides information for the public and policymakers about 7 climate related health harms and relates first-hand experiences from 4 physicians in different specialties in various parts of the country.

*Virginia pediatrician Samantha Ahdoot talks about the danger of new heat records. She had a personal brush with the impact of hot weather on children when her nine year old son needed emergency medical attention.*

(Continued on page 2)

Ron and Jay’s Truck Stop, or Go?

By Drs. Ron Blum and Jay Poliner

To all our Commercial Driver Medical Examiners...this column is for you. Have an interesting question or problem CDME case to share in a future newsletter? Do you have any other thoughts or opinions about these cases? Send them to Newsletter Editor, S. Upham, MD, MPH, FACOEM at su-pham@roadrunner.com.

Reader Question: OSA and Medical Certification:

Reader Anne R. writes, “In the Fall 2017 issue, Case 1…I thought that the 45-day “Determination Pending” option does not extend certification...” This refers to the case of a driver with recently diagnosed obstructive sleep apnea who at the time of the examination had not been on CPAP long enough to generate a compliance report. His current (ninety day) card expired in five days.

Anne is correct. The “Determination Pending” status does not extend his current certification beyond the five days left on the card. To permit the driver to continue driving, a new certificate, say for 30 or 60 days, could be issued. However, the examination would need to be repeated at the renewal of that limited card, when, assuming a good report, a one-year card could then be issued. Issuing “Determination Pending” would allow him to continue to drive, but only for the duration of the current certificate (five days).

Reader Question: OSA and CPAP Intolerance: Reader Anne R. raises a second question involving sleep apnea. She describes a driver with OSA who reports he cannot tolerate the CPAP mask. Although he is a night shift worker, the driver’s...
room care after he fainted while playing the clarinet at band camp. She realized then that summers are changing and that children are at excessive risk. She learned that 9,000 high school athletes are treated in emergency rooms for heat illness each year and men account for one third of all heat related visits.

*North Carolina emergency medicine doctor John Meredith was in the emergency room (ER) at Eastern Carolina University during a bog fire in the unusually dry summer of 2008. He noted a rise in respiratory and cardiac complaints and, with other researchers, devised a study that would evaluate his observation. He and colleagues compared ER visits in the counties that experienced the fire’s smoke plume with those that did not. The affected counties had a significant rise in emergency visits for an array of lung and heart ailments including asthma, chronic lung disease, bronchitis, heart attacks, and strokes compared to those counties that did not receive the plume. Of concern is the fact that now fire seasons now start earlier and last longer than they did in the past and may lead to increasing respiratory and cardiac illnesses in the population.

*Louisiana critical care physician Claude Tellis experienced the thousand-year rainfall and flood in his hometown of Baton Rouge in August 2016. Thirty thousand people had to be rescued by the Coast Guard and ten thousand went to shelters. People fled and left their life saving medicines behind. Dr. Tellis and other physicians worked with pharmacists to get medicines re-issued and delivered to shelters. Six months later, discarded ruined housing parts and appliances like refrigerators, washing machines, etc., were still piled up at curbs waiting for pick up. The emotional impact of this experience was notable. School children became frightened whenever it rained for fear of another flood.

*Rhode Island internist Nitin Damle saw a dramatic rise in tick borne illness in his practice. While he and his partners used to see 2-3 patients per month with Lyme Disease during the warm season; now they see 30-40. Other tick borne diseases have become more common. They regularly identify and treat babesiosis, erlichiosis, and anaplasma—all rarely seen in the past.

Beyond the personal stories, there is a rapidly accumulating body of research documenting the many ways that climate change is undermining the health of Americans. Unhealthy air quality develops on hotter days and puts breathing at risk—especially for those who have asthma or pre-existing lung disease. When vehicle or industrial emissions and fumes are exposed to heat and light, they undergo chemical transformation and become ozone (smog). Ozone irritates the airways of the lungs; when enough of it accumulates in the air, an ozone alert may be triggered. This could be a problem for anyone. But people who are most likely to have breathing trouble are the 15% of the population who already have a problem.

Others are more vulnerable to the other climate change effects. Children who spend much more time outside, pregnant women whose babies are developing in utero, and the elderly whose bodies no longer respond well to heat are all at greater risk on hot days. People who work outside or experience homelessness or have mental health conditions are also at greater risk during heat waves. Increased risk confronts people with fewer financial resources who cannot get protection during extreme weather.

Botanists tell us that the nutritional value of wheat and other grains is declining as the result of higher carbon dioxide concentration in the air because their protein content drops. In other words, wheat grown under high carbon dioxide conditions is less nutritious. Furthermore, droughts lead to crop decline, with resulting increases in prices, and greater food insecurity.

Water contamination is also occurring. Around agricultural areas, increases in storm water run-off during a heavy rain carries dissolved fertilizer that can spark harmful algae blooms in large bodies of water that people rely on for their drinking water. The water crisis that occurred in Toledo, Ohio in 2014 because of the algae bloom in Lake Erie was an example of this. When harmful algae blooms occur in recreational lakes, swimming may be banned.

These health harms will get worse unless we act to stop them. That is why physicians and medical societies have joined forces to speak out and urge action. They are offering education to their own members as well as the public and policymakers. The most important actions we can take are to stop wasting energy, increase energy efficiency, and accelerate the inevitable transition to clean renewable energy. In addition to limiting climate change, accelerating a transition to clean energy has the added benefit of rapidly cleaning up our air and our water so that we can all enjoy better health. Clean renewable energy choices like wind and solar do not pollute the air. They do not leave coal ash behind that pollutes groundwater with toxic metals. And they do not flow through pipelines that burst and foul the nearby landscape.

Most people are unaware that renewable energy is already generating a significant percent-age of electricity in some states. In Iowa wind accounts for 40%; in both Kansas and South Dakota, it is 20%. The total from renewable sources is growing quickly. The current distribution of energy sources may be seen in Figure 1.

![Figure 1](image)

**Figure 1.**


Americans waste a great deal of precious energy. Americans use far more energy per person than people who have similar lifestyles in European countries and far more than people around the world. Off the shelf energy efficient technologies and appliances could reduce our energy use by 25-40%. This is a huge savings and has the added benefit of leaving money in our pockets.

There are viable policy prescriptions for moving the U.S. and the rest of the world toward cleaner healthier non-polluting energy sources. Some include state renewable portfolios, incentives for using renewable energy, carbon taxes, carbon fees with dividends, and carbon auctions as implemented in the renewable greenhouse gas initiative of the U.S. northeastern states. After the failure of the federal energy bill with its carbon fee in 2010, federal policy focused on the Clean Power Plan implemented by the Environmental Protection Agency. The Trump Administration is in the process of trying to terminate that plan. Many states are moving forward with policies that reduce the output of greenhouse gases, others are not. Physicians can make clear that these measures do affect the health of our patients.

There is no longer any doubt that human-caused climate change is happening. Ninety seven percent of peer reviewed papers published by climate scientists agree about this fact.
Chemical sensitivity in the workplace can be a challenging workplace issue that is best managed using a collaborative approach between the occupational medicine clinician, human resources, disability accommodations office, industrial hygiene, and of course, the employee patient and their manager. At the Fall 2017 NECOEM “Meet Up: dinner gathering, I reviewed how I managed two of my chemical sensitivity cases.

Case 1. This patient was a 47-year-old office worker who could not occupy her office without experiencing dizziness, trouble concentrating and difficulty breathing. The office had been renovated several months prior with new carpet, paint and furniture, but there were no strong odors and none of the other 8 office co-occupants were affected. The employee was working from home because she believed chemicals in the workplace were causing her physical symptoms, but in this arrangement, she could not meet all the essential functions of her position and her employment status was at risk.

Case 2. This patient was a middle-aged office worker who identified herself as chemically sensitive and complained of physical symptoms in reaction to deodorants and perfumes, air freshener use in the bathrooms and office cleaning products, as well as the laundry detergents and fabric softeners used by coworkers. She could not use the office bathrooms nor work in certain office spaces nor even walk through certain halls at work. She was asking for management to implement a no fragrance policy and education program at this company.

Therefore, in my opinion, the approach to such employee complaints should be sympathetic, non-skeptical, and reasonably accommodating. A careful occupational, environmental and medical history along with a targeted physical exam as indicated should be conducted at the outset. A close look at the workplace with the support of an industrial hygienist should be performed to identify sources of chemicals or other odors. Additionally, there should be assessment of the adequacy of the air cleaning function and the fresh air supply of the HVAC system. Failing to find any major source of chemicals or inadequacies of the HVAC system, the OEM clinician still might consider a trial of a localized air purifier, with HEPA and charcoal filters. Personal protective equipment, such as a wearable air cleaner or a mask, have been used in some cases but are not often practical. Administrative controls such as reducing unnecessary fragrance and chemical use in the workplace, or seeking alternative workspace if available, sometimes is effective.

In both cases, I needed to reach out to colleagues in management, EHS, and human resources. We tried a temporary alternative workspace for the first worker. For the second worker, we designed and posted signage to encourage elimination of fragrances, requested housekeeping to use low VOC and less toxic bathroom cleansers, eliminated the use of “deodorizer” sprays, and arranged alternate access to the workspace so she could avoid areas of odors. We cited the online resource for such accommodation ideas in the postings of the Job Accommodation Network of the US Department of Labor Office of Disability Employment Policy. Both employees have remained at work though we are continuing our efforts to create and sustain an acceptable long-term work environment for them.

Dr. Diamond is the Associate Medical Director at MIT Medical and is the Treasurer for NECOEM.

At the 2017 NECOEM Annual Conference, Charles Yarborough, MD, JD, MPH, 2017-18 NECOEM President, described several of the ways the organization is supporting and advancing the needs of our profession.

ANSI Z-10 Revision Lacks Recognition/Inclusion of OEM Expertise: It was discovered that the ANSI Z-10 standard concerning health and safety management systems, which is currently under revision, did not include provisions for involvement of OEM trained physicians. The ANSI Z10* standard is relevant to the OEM profession as it sets minimum guidelines for “occupational health and safety management systems”, with the goal of “reducing the risk of occupational injuries, illnesses, and fatalities.”

Considering that the mission of this standard so closely aligns with ACOEM’s, and this standard is used by industry, ACOEM has communicated with ANSI, recommending that Board Certified or otherwise appropriately qualified OEM physicians should be recognized as experts regarding causation, medical management of OM injuries, health surveillance, and case management.

Collaboration with Other Organizations on Shared Concerns: ACOEM collaborates with other professional and business organizations, such as the American Psychological Association, with whom there has been joint interest in reducing disability and “return to function issues.” This relationship has resulted in a recent memorandum of understanding and joint interest in working together, such as a filing for grants to study these vexing problems.

Technology and ACOEM: To keep abreast of technological advances, a dramatic digital transformation is underway within the organization. A Learning Management System has just been purchased that will improve the way information is presented and captured and overall improve CME delivery and management.

*ANSI is a non-profit organization that administers and coordinates the US voluntary standards and conformity assessment system (www.ansi.org)
**NECOEM 2017 ANNUAL CONFERENCE SNAPSHOTs**

**The Presidents Gather:** NECOEM Pres. Dr. R. Blum and ACOEM Pres. Dr. C. Yarborough

**2017 Harriet Hardy Award Recipient**
*Eileen Storey, MD, MPH*
Pictured with ACOEM Pres. R. Blum

**Cecilia Lujan** is a Massachusetts Occ. Health Surveillance employee who is a communications specialist. She works with the FACE (fatalities) project and the Young Workers Project.

**Dr. D. Sparhawk, T. Robinson, PA, and Dr. T. Luna**

**L-R: S. Far, PA, Drs. B. Hunter Hatfield (back), R. Lefkowitz (middle front) and R. Hicks gather for discussion after Dr. Lefkowitz’s lecture on Workers at Sea.**

**Anne Ritzgerald, RN and Marcia Nelson, NP**

**Drs. P. Papanek, Y. Sayeed, and R. Hicks**

**Jazz performers entertain at the President’s Dinner Reception and Poster Session.**
A dynamic lecture on **Acupuncture** was presented by Dr. J. Audette

**Wm Patterson Memorial Lecturer B. Levy, MD, MPH** presented a sobering discussion on **Climate Change and Public Health**

**Maine members:** Dr. S. Upham, M. Nelson, NP and Dr. J. Torres

**Marijuana and Work: Up in Smoke** panel garners tremendous interest from audience; they respond to numerous post lecture questions (Front right to back right: Dr. J. Lei-kin, Atty. D. Dyleski-Najar, and Dr. L Okurowski.)

**Bicycling enthusiasts:**
Dr. and Mrs. G. Pransky

**RN Case Managers with Neighborhood Health Plan:** L. Eng, S. Johnson, and T. Nguyen

**Back L-R:** Drs. S. Upham and C. Hix Front L-R: Drs. R. Goldman and E. Storey
suggested solution was to wear the mask “during the daytime” presumably when awake. She appropriately is concerned that such treatment would be inadequate.

Mask tolerance can be a significant issue. The first approach should be to have a proper fitting by a trained technician, typically during a titration study, where fit, efficacy, and tolerance can be observed. In cases where mask use is not readily feasible, consideration of alternate treatment, such as a mouthpiece or surgery can be considered. The effectiveness of any such treatment would need to be validated with repeat testing.

**Student Case: Metastatic Prostate Cancer and Chronic Kidney Disease.** One of our training course students was concerned about a 61-year-old driver with recurrent metastatic prostate cancer and chronic kidney disease. The metastasis is into the iliac bone. He is currently doing well on hormone treatment and his urologist sent along a note stating, “He can drive.” The CME noted he seemed stable and functional at the time of the examination. Still he was wary of clearing him and chose “Determination Pending,” not because he was anticipating any additional information, but simply to bide his time to a final decision. He then called me.

I suggested that if the examination, including directed actions (palpation, hip motions) to the pelvis, did not reveal significant pain or limitation, he could request records or advice from the oncologist. If he ultimately chose to clear the driver, short repeated re-evaluations, e.g. every 2 or 3 months, would seem prudent.

**Introducing New NECOEM Board Member**

**Manoj Moholkar, MD, MPH**

Dr. Moholkar has practiced for 17 years in the field of OEM. He has also moonlighted in urgent care. He is currently a Medical Director/Occupational Health physician at Reliant Medical Group, Occupational Health, in Worcester, Massachusetts.

Originally from India, Dr. Manoj Moholkar attended Grant Medical College/University of Mumbai where he earned his medical degree. Subsequently, he completed a residency at UMass Memorial Center in Internal Medicine and later completed a fellowship in OEM at Mount Sinai Medical Center, New York. He obtained a Master’s in Public Health/Environmental Occupational Health at the University of Massachusetts at Amherst prior to entering his OEM residency. Dr. Moholkar has special interests in work fitness, wellness and disability issues.

Dr. Moholkar has lived with his wife and 2 children in Northborough, Massachusetts, for 12 years. Dr. Moholkar maintains his health playing tennis several days a week, which includes participation in a competitive tennis league for ages 45 years and older. He enjoys spending time with his younger son playing tennis, attending ballgames, biking and traveling.

(Continued from page 2)

Thousands of studies with multiple sources of evidence have demonstrated this. Moreover, climate change is harming our health now, in communities across the nation. These harms include heat related conditions, worsening chronic illness, injuries and deaths from dangerous weather events, infectious diseases spread by mosquitoes and ticks, infections from contaminated food and water, and mental health problems.

While the health of *any* American can be harmed by climate change, some people face greater risk. Children, student athletes, pregnant women, the elderly, people with chronic illnesses and allergies, and the poor are most likely to be harmed. Unless we take concerted action, these harms to our health are going to get much worse. And the sooner we act, the more harm we can prevent; and the greater our chances of protecting our people.

Physicians are sharing *Medical Alert!* with the public and policy makers. They have contacted members of Congress, the National Governors Association, the Conference of Mayors, the Administration, and the Fortune 500 corporations. They are speaking in favor of limiting climate change to the fullest extent possible -- so that the harm to the health of the public does not grow further. They are also speaking in favor of sustainability at their workplaces in offices and hospitals. (Consider: Hospitals and the health system account for 8% of greenhouse gases.)

Patients trust doctors to help safeguard their health. This trust is an important reason to close this gap in public awareness, beginning with the *Medical Alert!* report. This may seem like an unusual topic for physicians, but climate change has become a very real health problem for many patients cared for by these physicians. Physicians are sounding the alarm: the ultimate danger of climate change is that it is a danger to the health of every American.

https://medsocietiesforcimatehealth.org/reports/medical-alert/
www.medsocietiesforcimatehealth.org/report/
https://earthobservatory.nasa.gov/IOTD/view.php?id=86268
http://www.nature.com/articles/nature13179
PROFILE: Dr. Efia James is a first-year clinical fellow in the Yale Occupational and Environmental Medicine Program (YOEMP). She earned her undergraduate degree in mathematics as well as her M.D. from Howard University. Her interest in the health of underserved populations led her to complete her residency in Primary Care Internal Medicine at Yale-New Haven Hospital. She attended The George Washington University earning a Master of Public Health in Epidemiology where she studied the association between persistent organic pollutants and chronic kidney disease. Prior to becoming a YOEMP clinical fellow, she worked for the State of Maryland Disability Determination Services and the Veterans Health Administration Compensation and Pension Program helping injured workers and veterans obtain disability benefits. Her interests includes disability management, environmental epidemiology, and employee wellness.

POSTER: Uranium Dust Exposures in a Military Veteran by Efia James, MD, MPH & Rafael Y. Letkowitz, MD, MPH (YOEMP)

The literature on military exposures to uranium is dominated by depleted uranium and atomic weapons handling. In this case report, we describe exposures to naturally occurring uranium ores in a 35-year-old marine veteran who served in Iraq. While deployed in Iraq, his job duties included patrolling the Akashat uranium mine, inspecting trains transporting uranium, and training the Iraqi border patrol. He reported natural uranium exposures through inhalation of uranium dusts, particularly noting the high frequency of dust storms in the region, and ingestion of uranium from eating meals while on patrol or in dusty living quarters. This veteran had no evidence of adverse health effects from uranium exposures, including heavy metal effects on the kidneys or lung cancer.

This case study highlights the importance of recognizing uranium exposure from “natural” dust vectors during routine military tasks in an at-risk environment. This is a sentinel case bringing to light many similarly exposed military personnel. Therefore, occupational medicine physicians caring for our military personnel should consider a wide range of exposure sources and their potential health effects.

PROFILE: Dr. Brian Linde is a second-year fellow in the Yale Occupational and Environmental Medicine Program. He completed his residency training in the Yale Internal Medicine Primary Care Residency, where he was chief resident. His interests include indoor and outdoor air quality, physician well-being, and occupational and environmental medicine education. He prepared the module with Associate Director of the Yale Occupational and Environmental Medicine Program, Dr. Mellisa Pensa.

POSTER: Environmental Medicine: Hurricane Season 2017 by Brian Linde, MD and Mellisa Pensa, MD, MPH

This year at NECOEM, Dr. Brian Linde presented the poster: “Update in Environmental Medicine: Hurricane Season 2017,” an educational module for occupational and environmental medicine providers. Climate related natural disasters are occurring with increasing frequency all over the globe. The U.S. experienced 16 billion dollars’ worth of weather and climate disasters during 2017 alone. Using the examples of the high profile and devastating Hurricanes Harvey, Irma, and Maria, the module focuses on four major categories of flood-related health hazards: flood water contaminants, damage in infrastructure, mold, and psychological stress. In addition to the exposure-related topics of contaminants in the flood waters and mold in damaged buildings, the module focuses on the important effects of natural disasters on chronic disease and mental health, which are increasingly being recognized as public health concerns. The module is of particular interest, as OEM providers are often called upon to assess the health impacts of extreme weather events and other environmental disasters.

NECOEM and MaAOHN welcome posters from residents and all students. These are exhibited during the President’s Reception of the Annual Conference. Visit www.necoem.org for details.
WHO IS IT?

This famous physician popularized the social determinants of health. He criticized the living conditions of the coal mining population attributing the conditions to a typhus epidemic in a country in Europe in the 1840s. His contributions to medicine are many, especially in the fields of cell biology and cancer. Among the medical terms named after him include a famous triad and an enlarged lymph node that serves as a “sentinel node”. Who Is It?

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Please send responses to Dr. Abhijay Karandikar at dr_abhik@yahoo.com Readers who send in correct responses will be identified in the next issue. The correct answer will be published in the next issue of the NECOEM Reporter.

This section is a series of trivia, facts, figures, etc. related to the field of occupational medicine. If you have any such interesting or fun-filled material, please e-mail it to the associate editor at dr_abhik@yahoo.com. All material should be related to the specialty of occupational and environmental medicine and have an educational, inspirational, historic or other relevant value.

ERRATUM: The response in last issue “What Is It” section erroneously listed Vinyl chloride monomer as chloroethane. It should be chloroethene.