

GREENFIELD RECORDER

Health science matter, Thursday Feb 4, 2010

Massachusetts Medical Society's opposition to biomass plants

The purpose of this article is to describe the process and scientific rationale for the resolution by the Massachusetts Medical Society opposing biomass plants. Local physician delegates representing Franklin County doctors are acknowledged for their participation in this important resolution.

The Massachusetts Medical Society representing over 22,000 physicians at its House of Delegates meeting on Dec. 4 and 5, 2009 adopted a resolution titled "Reducing Air Pollution and Promoting Public Health by Opposing Biomass Power Plants."

Specifically the MMS urged the state government to adopt policies to minimize the approval and construction of new biomass plants and instead promote energy efficiency and conservation and zero pollutant renewable energy technologies. The MMS stated its opposition to the three currently proposed largescale biomass power plants in Massachusetts on the grounds that each facility poses an unacceptable public health risk.

The sponsors of the resolution were Robert Naparstek, MD, chairman of the Committee on Environmental and Occupational Health of the MMS and Jefferson Dickey, MD, MPH, a local Franklin County physician with environmental health expertise who works at the Community Health Center in Montague.

At our House of Delegates meeting, the biomass resolution was backed by peer review references, physician and nonphysician expert testimony, and accepted and analyzed by a physician Reference Committee. The following day the resolution was discussed at all District Medical Society caucuses and finally voted on by the House of Delegates.

The following concerns against biomass plants were raised by a number of speakers. These concerns included the sustainability of the fuel supply over the long term; global warming due to increased CO₂ production; the poor energy efficiency of wood combustion; difficulty accepting the principle of carbon neutrality and finally the minimal contribution of these plants to the state's total electrical generating capacity.

The society's main opposition to biomass plants focused on air pollution and public health. Particulate air pollution has been recognized as a cause of excess deaths for over 60 years. Hundreds of epidemiological studies have described an association between elevated particulate air pollution levels and mortality. There is a direct correlation between elevated particulate matter and cardiopulmonary symptoms, asthma attacks, respiratory disease, emergency room visits and hospitalization rates. Two seminal epidemiological studies, one by Dr. W. D. Dockery et al published in 1993 in the New England Journal of Medicine and the other by Dr. C. A. Pope et al published in 2009 also in the New England Journal of Medicine showed a correlation between levels of

particulate matter and loss of life expectancy in major United States cities including those in Massachusetts. The conclusion of both studies is that a reduction in exposure to ambient fine particulate air pollution contributes to significant and measurable improvement in life expectancy in the United States.

Western Massachusetts is very close to being out of compliance with the EPA's 24-hour standard to PM 2.5 also called fine particulate matter measuring 2.5 microns or smaller in size. These small particles are medically important because they easily reach the small distal bronchi and alveolar lung tissue producing inflammatory, toxic, and immunogenic reactions resulting in disease. If all three biomass plants are built their emissions would result in a 25 percent increase in PM 2.5 in the atmosphere of Franklin, Hampshire and Hamden counties.

Ozone air pollution is formed in the atmosphere from nitrogen oxide and volatile organic compounds in a reaction driven by ultraviolet light. Increased ozone can cause chest pain, shortness of breath, cough, wheezing, susceptibility to infection, decline in respiratory functions and increase in asthma attacks. Western Massachusetts is designated as a non-attainment zone for the EPA's maximum daily 8-hour average ozone concentration. The American Lung Association gave air quality in Hampshire and Hamden County an "F" grade. Nitrogen oxide emissions will increase by 11 percent if all three biomass plants are built. This will increase the ozone problem in our area.

Diesel particulate matter is a toxic form of PM 2.5 implicated in a range of health problems. Biomass activities will require between one and two gallons of diesel fuel per ton of wood fuel resulting in significant increases in nitrogen oxide, volatiles and PM 2.5. Higher levels of lead, mercury, arsenic, copper, chromium and dioxin pollution especially from the Springfield plant could potentially affect the health and welfare of our patients.

The Massachusetts Department of Public Health Bureau of Environmental Health has determined that pediatric asthma rates and secondary hospital admission rates for chronic obstructive pulmonary disease in the Greenfield area are statistically higher than the state average. The reasons for this are unclear but a local biomass plant could only aggravate the situation.

For all of the above reasons the following Franklin County Medical Society delegates voted to support the Massachusetts Medical Society's resolution against biomass plants: William Doyle MD, Stephen Fox MD, Douglas Fusonie MD, Brett Hynninen MD, Sarah Kemble MD, MPH and Joseph Viadero MD.

Dr. William Doyle is a Greenfield physician.