

October 4, 2012

Re: Missouri PSC Case No. AX-2013-0091

I am the Medical Director of the National Center for Medical-Legal Partnership and am an Associate Professor of Pediatrics at the Boston University School of Medicine, the former Director of Pediatric Healthcare for the Homeless at Boston Medical Center, a research scientist with Children's Health Watch and a nationally recognized expert on housing and child health. I served as a general academic fellow at Boston Medical Center with a concentration in environmental health in children, earning a Masters of Public Health with a dual concentration in environmental health and epidemiology and biostatistics in 2002. In 1998, I published with other doctors at Boston Medical Center, the DOC4Kids report, a national report on how housing affected child health. In 1999, I followed as an author on "There's No Place Like Home", a second report documenting how asthma, lead, injuries, homelessness, food insecurity, chronic disease and educational attainment were all affected by housing. In 2000, I was a co-Principal Investigator of the Boston Healthy Homes Partnership, a grant from Department of Housing and Urban Development to the Boston Public Health Commission, to study if housing changes improved the health of children with asthma. I am a founding member of the Asthma Regional Council of New England. Over the course of my career, I have written numerous scientific articles and papers. I serve on numerous committees and advisory boards, such as the National Center for Healthy Homes, a national advocacy group, and both national American Academy of Pediatrics Committee on Environmental Health and Massachusetts Chapter of the American Academy of Pediatrics.

My testimony submitted in reference to Missouri PSC Case No. AX-2013-0091 summarizes my conclusions of why the premise visit and door knocking, particularly at time of disconnection for nonpayment, is important to maintaining public health and safety and why a premise visit and door knocking should be retained under current Missouri law as Advanced Metering Initiatives are rolled out. I base this testimony on the findings of a Health Impact Assessment (HIA) I led assessing the potential positive and negative health impacts of Commonwealth Edison (ComEd) deployment of Advanced Metering Initiative (AMI) within its service territory in Illinois. This HIA made recommendations designed to increase positive health impacts and mitigate negative health impacts, particularly life threatening ones, associated with the AMI installation and the research has implications for this case as well. My testimony focuses on the chief findings and recommendations of the HIA which pertain to the consumer protections related to residential electrical service, the need for monitoring of service status and costs for certain groups of households, and consumer education, as well as my own observations as a medical doctor and public health expert on the importance of a premise visit and door knock when considering disconnection for nonpayment.

The HIA identifies two negative outcomes associated with disconnection of service for nonpayment. The first is that posed by the loss of power to electrically powered medical devices such as nebulizers and sleep apnea machines, used by an estimated 25% of the low-income households in ComEd's service territory.[1] Disconnection, especially without regard to consumer protections regarding advance notification and in-person contact with the consumer, presents a danger to medically frail household members dependent on these devices.

[1] This estimate is based on a national sample survey of LIHEAP recipient households, as discussed in the full HIA report available at www.healthimpactproject.org.

A second negative health impact highlighted in the HIA is the use of alternative, risky sources for heating and light and relates to the risks of residential fires (particularly from candles), exposure to nitrogen dioxide, elevated moisture levels, and carbon monoxide poisoning, linked to the use of cook stoves for heat, portable non-electric space heaters (especially those that are unvented), and inadequate heating or cooling. The heightened risk of disconnection for nonpayment among low-income households, and the quicker pace of disconnections anticipated with AMI deployment, make these households acutely vulnerable.

- One study¹ of single-family house fires finds that heating equipment is the single most common cause of fires and that space heaters (mostly kerosene) cause 58% of fatal fires and 30% of non-fatal fires.
- Indoor nitrogen dioxide levels are raised by the use of natural gas-fired appliances such as ovens or range tops for heat. Young children are 80% more likely to have asthma when they live in homes where a gas stove, oven, or space heater is used for heat, reflecting exposure to higher levels of nitrogen dioxide.²
- Inadequately cooled or heated homes are more likely to trap moisture and result in mold growth; a meta-analysis of studies derives estimates of more than twice the likelihood that children will develop asthma when household dampness is present and almost two-and-one-half-times the likelihood where mold is present.³

¹ Runyon et al Risk factors for fatal residential fires. New England Journal of Medicine 327 no 12 859-863

² Lanphaer et al 2001. Residential Exposures Associated with asthma in U.S. Children. Pediatrics 107 no.3: 505-511.

³ Braubach et al 2011 Environmental Burden of disease associated with inadequate housing. Methods for quantifying health impacts of selected housing risks in the WHO European region. Copenhagen, Denmark; World Health Organization regional Office for Europe.

- Using gasoline-fueled generators to provide electricity or heat presents the threat of poisoning or death from carbon monoxide (CO), an invisible, deadly gas. Exposure to carbon monoxide can cause effects ranging from headache and nausea to coma and death, with long-term neurological effects for those who survive exposure. Pregnant women, young children, elders, and people with cardiovascular or respiratory disease are more sensitive than average to the effects of CO.⁴

Based on the literature review of the Health Impact Assessment (HIA), One of the Main Recommendations of the HIA was: The remote connection and disconnection functionality of Advanced Metering Initiatives (AMI), especially in the case of involuntary loss of service for nonpayment, must be deployed to promote and not endanger the health and safety of vulnerable customers. In this case, I would recommend maintaining the premise visit and door knock since those remain important to the public health and safety, not only of the family who may be disconnected for non-payment, but also the surrounding families who are placed at higher risk for fires, death and carbon monoxide poisoning as listed above.

The HIA analysis of the ComEd pilot documented a potential for an increase in the incidence of disconnection for nonpayment among the households eligible for disconnection for nonpayment during the pilot period. It is likely that greater numbers of low-income households will lose their access to electrical service more quickly if a utility uses remote disconnection for nonpayment because (1) bills will be higher to pay for the new AMI and smart grid investments in the early years of deployment; and (2) the elimination of the need for a truck and field

⁴ Centers for Disease Control and Prevention 2005 Unintentional non fire related carbon monoxide exposures- United States 2001-2003 Morbidity and Mortality Weekly report 54:36-39

personnel to disconnect will mean that larger numbers of customers with overdue bills can be disconnected earlier in the collection cycle.

Based on this evidence and the scientific evidence of public health hazards from disconnection, it is my recommendation as a physician and public health professional that a premise visit and attempted customer contact should be retained. The extreme negative health risks related to disconnection for nonpayment outweigh any lesser risks related to increased costs that may result from these customers remaining connected. It is imperative that these vulnerable customers, particularly the elderly, receive a premise visit and customer contact for health and safety reasons.

Based on the ComEd AMI HIA literature reviews, there are documented risks for fires, deaths, and severe morbidity such as unnecessary hospitalization related to loss of electricity from disconnection for nonpayment. Though fuel poverty from higher bills is also a potential negative health impact for some customers, it is not as severe a health risk as the risk of hospitalization, fires or death related to loss of electricity for non-payment.

There is a clear threat to health and safety if consumer protections are not retained, specifically with regard to the current consumer protection that requires a premise visit and attempted in-person contact with someone at the residence at the time of disconnection. This consideration is especially important for consumers who are at greater risk of falling into arrears on their electricity bill. In my opinion as a medical health professional, both the premise visit and the attempted contact with the utility customer are important for health and safety, given the severe health consequences from loss of electricity.

If you have any questions, you may contact me at my office 617-414-3680 or my cell phone 617-733-6989. Thank you for your consideration.

Sincerely,

A handwritten signature in cursive script, appearing to read "M. Sandel".

Megan Sandel, MD, MPH

Associate Professor of Pediatrics and Public Health

Boston University Schools of Medicine and Public Health