





Energy efficiency can improve public health by reducing pollution and making homes safer. Non-energy impacts (NEIs) are outcomes associated with efficiency activities other than direct energy consumption and related savings. Typically, NEIs are positive outcomes for direct beneficiaries, such as improved <a href="health">health</a> and <a href="mailto:safety">safety</a>. Program administrators have considered ways to <a href="mailto:quantify">quantify</a> the NEIs associated with their programs. This newsletter focuses on NMR's work in this area.

## Saving Lives Through Energy Efficiency

Valuing the Health- and Safety-Related Benefits of Weatherization in Low-Income Homes

IEPEC paper by Christopher Chan (Eversource), Greg Clendenning (NMR), et al.

NMR led a comprehensive, integrated study to re-examine and quantify the health- and safety-related NEIs of the single-family low-income (LI) weatherization program in Massachusetts. The study produced NEI values that are substantially higher and considered more robust than values from a 2011 NEI study. This is primarily due to the study's ability to better detect and quantify improvements in health status from weatherization.

Estimated number of avoided deaths, hospitalizations, and emergency department (ED) visits for each health-related NEI (annually per 1,000 housing units weatherized)



Reduced Asthma



Reduced Thermal Stress (Cold)



Reduced Thermal Stress (Heat)



Reduced CO Poisoning



Reduced House Fires

Avoided Deaths: N/A Avoided Hospitalization: 9.9 (adult) 4.2 (child) Avoided ED Visits: Avoided Deaths: 0.05 Avoided Hospitalization: 1.9 Avoided ED Visits: 7.6

Avoided Deaths: 0.01 Avoided Hospitalization: 1.1 Avoided ED Visits: 23.6 Avoided Deaths: 0.004 Avoided Hospitalization: 0.07 Avoided ED Visits: 0.47 Avoided Deaths: 0.009 Avoided Hospitalization: 0.013 Avoided ED Visits: 0.4

## Value of NEIs

The total value of the health-related NEIs (reduced asthma, thermal stress, and losses in work income) increased from \$19 to \$769 per weatherized home annually (\$172 without including the avoided death benefit).

2011 2016

Increased Safety Thermal Comfort Health Benefits

\$ 45 \$ 94

**\$ 101 \$ 120** 

\$ 19 \$ 796

## **Read Full Paper**

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