Healthy and Energy Efficient Homes

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Children’s Health Watch

• Poor and non-poor households increased fuel expenditures in response to unusually cold weather (by $37 and $53 on average, 1982-84 dollars).

• Poor families also reduced food expenditures by roughly the same amount as their increase in fuel expenditures; richer families just increased food expenditures.

• Poor parents and their children spend less on and eat less food during cold-weather budgetary shocks.

## Fuel Assistance & Child Health

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Does Not Receive LIHEAP (n=5925)</th>
<th>Receives LIHEAP (n=1149)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Wt/Age Z-Score</td>
<td>-0.333</td>
<td>0.076</td>
<td>P = 0.01</td>
</tr>
<tr>
<td>At Nutritional Risk for Growth Problems</td>
<td>1.23</td>
<td>1.00</td>
<td>P = 0.05</td>
</tr>
<tr>
<td>Acute Hospital Admission</td>
<td>1.32</td>
<td>1.00</td>
<td>P = 0.05</td>
</tr>
</tbody>
</table>

Fuel Assistance Benefit

Compared to young children in eligible families, who do NOT receive LIHEAP, those who do are:

• 20% less likely to be underweight for age or length and
• 30% less likely to require admission on the day visiting an emergency room.

Watts and Well Being

Adults reported a 0.29 point improvement in mean health score (3.07 to 2.78, p<0.001).
Watts and Well Being

Reduced asthma medication use; mixed results on symptoms

5% reductions in sinus infections
Weatherization

Health & Safety Measures

- Minor Moisture Repairs/Asthma Reduction
- Window Replacement/Lead Reduction
- Heating System Repair/Replace
- Smoke Alarms
- CO Detectors

Radon Changes Post Weatherization in Maine

- 63% of homes showed a decrease in radon levels post-weatherization.
- 21% of homes remained the same.
- 2% of homes had an increase in radon levels post-weatherization.
- 14% of homes had an increase in radon levels post-weatherization.

Source: Tohn, MIAQC 2012

56 homes experienced a 1.6 (pCi/L) increase in radon levels post-weatherization.
Dirt Floors & Sumps Greatest Risk

Homes open sump pumps 4 times more likely to cross radon action level 4 pCi/L

Homes dirt floors 27 times more likely to cross radon action level 4 pCi/L
US Policy Guidance

Environmental Protection Agency *Health Indoor Environment Protocols for Home Energy Upgrades*

Department of Energy *Weatherization Guidance Standard Workforce Specifications*
Take Aways

• Fuel assistance in lower income families creates health benefits for young children
• Energy upgrades produce general health improvements, specialized health and safety repairs create added health benefits
• Radon levels can increase following energy efficiency upgrades
• US federal policy articulates minimum health protections during energy upgrades (EPA & DOE)