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Examples of how HIAs on Energy Influenced Decisions

Megan Sandel MD MPH
Medical Director
National Center for Medical Legal
Partnership

National Center for Medical  Legal Partnership
www.medical-legalpartnership.org

Example: State Funding for LIHEAP

Unhealthy Consequences: Energy Costs and Child Health

A Child Health Impact Assessment of
Energy Costs and the
Low Income Home Energy Assistance Program

Prepared by the Child Health Impact Working Group
Boston, Massachusetts
November 2006

Draft Report

Screening:

Decision: MA state legislature, about supplemental LIHEAP funding.

"In each of the last two fiscal years, the Massachusetts Legislature found federal funds inadequate and added \$20 million in state aid to LIHEAP. This budget cycle, there is no state money for LIHEAP."

(Eileen McNamara, "Time to Turn Up the Heat" *Boston Globe*, Nov 19, 2006)

Child Health Impact Working Group, Energy Assistance Subcommittee: Boston Medical Center/Medical Legal Partnerships for Children, National Consumer Law Center

Timeframe: 2005-2006

Funding: Private (anonymous donors)

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Table 1. Pathways of the Impacts of Unaffordable Energy on Low-Income Households

Mechanism	Short-Term Impacts	Medium & Long-Term Impacts
<p>High energy costs force budget trade-offs that jeopardize child health. Families spend less on food, medications, and housing in order to pay high energy costs.^{2,3,4}</p>	<ul style="list-style-type: none"> - "Heat or eat"- food insecurity & other nutritional risk due to trade-offs between energy and food expenditures - Seasonal food insecurity 	<ul style="list-style-type: none"> - Poor growth - Malnutrition - infection cycle leading to increased illness - Cognitive, developmental deficits of malnutrition affecting school performance
<p>High energy costs force the use of risky alternative sources of heat. Families use ovens, stoves, space heaters, or fireplaces to replace or augment primary heating systems.^{5,6,7}</p>	<ul style="list-style-type: none"> - Increased risk of contact burns - Increased risk of carbon monoxide poisonings - Increased risk of house fires 	<ul style="list-style-type: none"> - Possible long-term health consequences of burns, carbon monoxide exposure - Economic impact of preventable hospitalizations
<p>High energy costs combined with unaffordable housing force families to endure unhealthy housing conditions. High energy costs contribute to budget constraints limiting families' ability to afford appropriate housing, resulting in exposure to unhealthy housing conditions:</p> <ul style="list-style-type: none"> - Rodent & cockroach infestation - Water leaks and mold - Peeling paint and lead paint⁸ 	<ul style="list-style-type: none"> - Increased incidence & severity of asthma - Increased incidence of lead poisoning - Preventable injuries from fires, burns, falls - Increased rates of infectious diseases, such as diarrhea and respiratory conditions 	<ul style="list-style-type: none"> - Increased health care utilization, including emergency department visits and hospitalizations - Missed school due to illness - Cognitive and developmental deficits due to lead poisoning
<p>High energy costs result in unpaid bills, arrears and utility disconnection. Families make partial rent or mortgage payments or miss an entire payment because of unaffordable energy bills.</p>	<ul style="list-style-type: none"> - Potential cold exposure - Increased use of alternative heating sources (see above) - Possible loss of utilities required for basic health and safety: light, refrigeration, cooking, water heating - Increased risk of housing instability due to utility disconnection 	<ul style="list-style-type: none"> - Adverse physical health impacts, including lack of primary care, untreated or undertreated medical conditions, growth delay - Adverse mental health impacts, including anxiety, depression, behavioral disorders - Adverse behavioral, developmental and educational impacts, including developmental delay, grade repetition

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Recommendations

Funding

Given continued gap between energy costs & LIHEAP funding, federal govt should fully fund LIHEAP at maximum authorized \$5 billion level, to allow increase in both participation and benefit level

To increase LIHEAP benefits levels for vulnerable MA families, state govt should allocate supplementary funds for LIHEAP

Programmatic Changes

To highlight link between high energy costs and child health, LIHEAP should extend outreach to clinicians & health care settings
LIHEAP administrators should consider initiative to provide energy & utility assistance, through LIHEAP or other programs, to low-income families who are eligible for housing subsidies but spend years on waiting lists

Data Collection

MA to enforce existing requirement that utilities collect & report

data on arrearages & utility disconnections to state regulator (DTE)
to address important data gaps that undermine MA's ability to
request release of emergency LIHEAP funds
Energy assistance programs should explore using home energy
insecurity scale, such as scale proposed by USDHHS Div Energy
Assistance

LIHEAP in Massachusetts

Recommendations

Funding

- ✓ Given gap between energy costs and LIHEAP funding, full federally authorized \$5 billion funding, to allow increase in both participation and benefit level
- ✓ MA should allocate supplementary funds to increase LIHEAP benefit levels

Programmatic Changes

- ✓ Highlight link between high energy costs and child health, LIHEAP should extend outreach to clinicians and health care settings
- ✓ LIHEAP administrators should consider providing energy and utility assistance to households eligible for housing subsidies but on wait list

Data Collection

- ✓ MA to enforce existing requirement that utilities collect and report data on arrearages and utility disconnections to state regulator, addressing data gaps that undermine MA's ability to request release of emergency LIHEAP
- ✓ Energy assistance programs should explore using home energy insecurity scale

Reporting: DPU testimony

Monitoring: Additional state-only funding for LIHEAP

AMI (Digital Meter) Deployment in Illinois



Decision by state regulatory body (ICC):

Initial: whether Commonwealth Edison will deploy residential digital meters across service territory, jointly financed by DOE and ratepayer base, pending results of Cook County pilot

Mid-stream: state enacts law mandating AMI deployment, so question becomes terms for deployment

Stakeholders: CommEd, State AG, Citizens Utility Board, AARP

Timeframe: 2010 –2012 (rate case for AMI deployment)

Principals: NCMLP, Citizens Utility Board, Barbara Alexander (independent consumer consultant, AMI), Lynne Snyder (consultant, fuel poverty)

Funding: grant from Health Impact Project, in-kind/pro bono by co-principals

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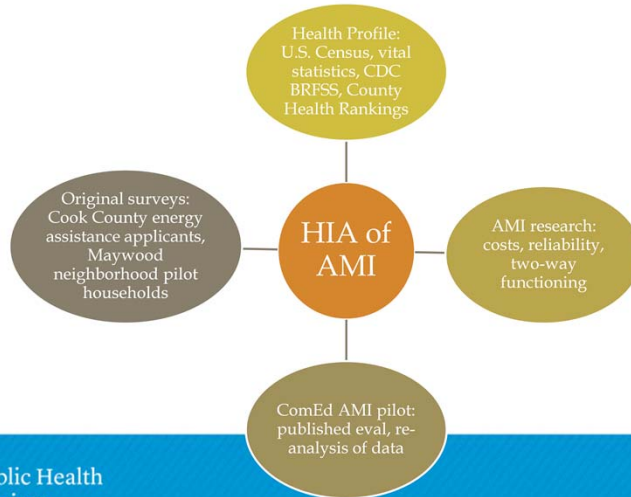
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Literature review using existing datasets (e.g., U.S. Census Bureau’s American Housing Survey, CDC’s Behavioral Risk-Factor Surveillance Survey); analysis of other dynamic pricing pilots and AMI costs in other states

Review of ComEd published evaluations and original analysis of primary pilot data provided by ComEd

Original surveys developed by the HIA team to capture the experiences of low-income households with smart meters during the ComEd pilot

HIA of AMI: Assessment



Research Questions:

1. Whether AMI will raise customer rates for electricity service because of the additional infrastructure investment costs.
2. Whether or not new pricing programs enabled by AMI will provide benefits to customers or increase costs at times vulnerable customers can least afford it.
3. Whether or not the use of a remote service switch to connect or disconnect service, particularly in the case of disconnection for nonpayment, will have adverse impacts on vulnerable populations.

Legal Partnership

**PREDICTED HEALTH IMPACTS OF AMI
IN COMMONWEALTH EDISON SERVICE TERRITORY**

Health Determinants and Outcomes	Size of At-Risk Group (Direction Negative Unless Otherwise Noted)	Severity Likelihood	Quality of Evidence
FUEL POVERTY FROM HIGHER ELECTRICITY COSTS			
Pressure on Household Budgets	All households with AMI	▼▼▼	●●●
Poor Nutritional status	12% of Illinois households that are food insecure	▼▼▼	●●●
Decreased Access to Health Care	10.2% of adults report limited access to physician due to cost 12.4% of adults report limited access to prescription fix due to cost	▼▼▼	●●
Poor Housing Quality	5.2% of households report moderate/severe housing problems	▼	●●●●
HEALTH IMPACTS RELATED TO AMI TECHNOLOGY			
Reduced Air Pollution from Fewer Emissions	28.9% of adults report high blood pressure or cardiovascular disease 14% children, 13% adult population with asthma	==	●●●
Remote Connection After Disconnection	All households with AMI	==	●
Remote Disconnect for Nonpayment	47% of households have housing costs >30% of income	▼▼	●●
Exposure to Non-ionizing Radiation	All Households with AMI	==	●
UNINTENTIONAL INJURIES & PREMATURE DEATHS FROM DISCONNECTED SERVICE			
No Access to Electrically Powered Devices for Medical Uses	25% of low income households use electrically-powered medical device	▼▼	●
Use of Alternative, Risky Sources for Heat & Light	0.2% of poor households nationally heat home with cook stove 13.3% of households use portable electric space heater	▼▼	●●●
TEMPERATURE-SENSITIVE CONDITIONS MADE WORSE BY EXPOSURE TO HEAT OR COLD			
Decreased Access to Cooling	56.6% of low income households report no central a/c (37.9% of all households)	▼▼▼	●●●
Decreased Access to Heating	20.3% of low income households report electricity as main heating fuel (11.3% of all households)	▼▼	●●●●
Heat and Cold-related Illness (e.g., heat cramps, hyperthermia, hypothermia)	Age (7.2% of households include child <5 yrs, 11.2% of households include elder 65 yrs +) Social isolation (18% adults report no social support, 31.6% of low-income seniors live independently) Disability status (5.8% households include member living with mobility-limiting disability, 10.2% of low-income households include member living with mobility-limiting disability)	▼▼▼▼	●●●●
Heart Disease	28.9% of adults report high blood pressure or cardiovascular disease	▼▼▼	●●●
Respiratory Disease	14% children, 13% adult population with asthma	▼▼▼	●●●
Diabetes	8% of adults report diabetes diagnosis	▼▼	●●

LEGEND:
 ▼▼▼▼ Strong impact on many
 ▼▼▼ Strong impact for medium number or moderate impact on many
 ▼▼ Moderate impact on medium number or strong impact on few
 ▼ Moderate impact on few
 ●●●● 10+ Strong studies
 ●●● 5-10 Strong studies or data analysis
 ●● 3-5 Strong studies or data analysis
 ● 1-3 Strong studies OR 1+ more studies of moderate quality
 ○ <3 studies of moderate quality OR studies with mixed results
 == There is evidence to suggest impact, however none was found during the pilot or there was insufficient evidence to comment

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Conclusions:

- Sizable proportion of the metropolitan region population = at-risk
- Persons with temperature-sensitive conditions (heart disease, respiratory disease, diabetes), disproportionately low-income. Likely that burden of chronic illness will increase if households respond to higher prices for electricity by
- Electing not to use air-conditioning during hot days.
- Maintaining homes at colder temperatures in wintertime.

Recommendations overall:

- Mitigate anticipated adverse outcomes, particularly by increasing consumer education to decrease usage and costs
- Track potentially vulnerable households for enhanced consumer protections.
- Deploy AMI in terms that protect at-risk consumers.

5 Sets of Recommendations:

1. Analyze proposed terms of deployment with respect to clearly defined groups and at-risk residential customers, including an analysis of the likely impacts on

health and safety.

2. Proposed cost recovery from electric customers should link benefits and costs for vulnerable customers specifically, in addition to linking benefits that are documented and realized for all customers.


3. Proposed time-based pricing programs for AMI should offer incentives for vulnerable households to optimize their use of electricity from the perspectives of health as well as of energy efficiency. Peak time rebates should be relied upon, as opposed to time-based pricing.

4. The remote connection and disconnection functionality of 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. HIA co-principals did not fully agree on how to implement this recommendation –three of the four called for prohibiting remote disconnection without a premise visit.

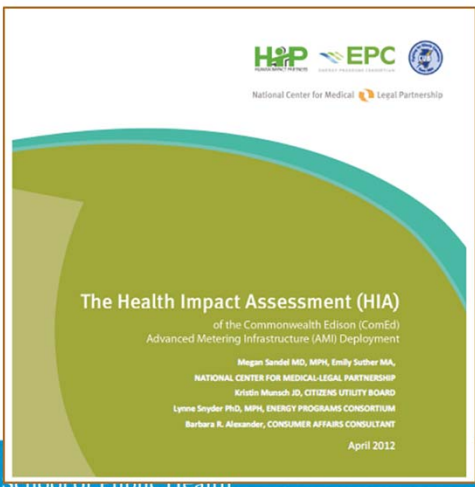
5. Any AMI deployment and programs that seek customer engagement to make use of the new metering and communication system must be accompanied by robust consumer education and outreach to customers to obtain their awareness of and participation in approved programs.

Results:

- HIA entered into rate case before state public service commission (ICC)
- Expert testimony before ICC
- ICC Order accepts HIA as useful, incorporating evidence into deliberations on terms for AMI deployment

National Center for Medical  Legal Partnership

HIA of AMI: Results



The Health Impact Assessment (HIA)
of the Commonwealth Edison (ComEd)
Advanced Metering Infrastructure (AMI) Deployment

Megan Sandoz MD, MPH, Emily Suther MA,
NATIONAL CENTER FOR MEDICAL-LEGAL PARTNERSHIP
Kristin Munsch JD, CITIZENS UTILITY BOARD
Lynne Snyder PhD, MPH, ENERGY PROGRAMS CONSORTIUM
Barbara R. Alexander, CONSUMER AFFAIRS CONSULTANT
April 2012

Recommendations

Mitigate anticipated adverse outcomes, particularly by increasing consumer education to decrease usage and costs

Track potentially vulnerable households for enhanced consumer protections.

Deploy AMI in terms that protect at-risk consumers.

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5. Any AMI deployment and programs that seek customer engagement to make use of the new metering and communication system must be accompanied by robust consumer education and outreach to customers to obtain their awareness of and participation in

approved programs.

Monitoring & Evaluation

Intervenor (AARP and State Attorney General's Office) enter HIA into rate case before state public service commission (ICC)
 Dr. Megan Sandel, HIA Principal, submits expert testimony
 ICC Order accepts HIA as useful, incorporating evidence into deliberations on terms for AMI deployment

STATE OF ILLINOIS
 ILLINOIS COMMERCE COMMISSION

Commonwealth Edison Company :
 :
 :
 Petition for Statutory Approval of a Smart : 12-0298
 Grid Advanced Metering Infrastructure :
 Deployment Plan pursuant to Section :
 16-108.6 of the Public Utilities Act. :

ORDER

By _____
 Ad _____
 Cc _____
 (7) _____

One of the key recommendations of the Health Impact Assessment Report, sponsored by AARP/AG witness Sandel, is the need to focus on the impacts of the costs and benefits of AMI deployment on "vulnerable" customers. In addition to low income customers, this term is defined as those customers with an elderly, disabled, or very young member of the household, as well as those who rely on a language other than English. Utilities do not typically track or identify customers that meet these requirements unless, for example, the low-income household participates in a bill payment assistance program that is reflected in the utility's customer service database. The availability of this information is vital to determining whether these vulnerable customers actually see the benefits of this AMI deployment that ComEd has promised. Furthermore, this HIA Report has clearly documented that ComEd serves a large number of such customers and that they are particularly susceptible to adverse health and safety consequences when electricity is unaffordable and actions are taken, such as faster and more frequent disconnection of service, that threaten access to affordable electric service. Therefore, AARP recommends that ComEd be required to conduct statistically valid separate surveys of its residential customers in Chicago specifically and in areas served outside Chicago on an annual basis to obtain the following information for low income and each of the customer groups that meet the definition of "vulnerable" customers in the HIA Report. This information should be gathered for customers whose AMI meters are activated and those without the new metering system to see if there is a difference in customer response. The following reporting

Note that co-principal and intervenor Citizens Utility Board (CUB) did not support entering HIA into the record.