

Health Impact Assessments

EMILY SUTHER, MA; MEGAN SANDEL, MD, MPH

ABSTRACT

Health Impact Assessment (HIA) serves as a tool for policymakers and planners when considering a new policy, project, or plan that will influence the health of people outside of the doctor's office. HIA is a series of steps that can be used to determine how a proposed plan, policy, or project may affect any number of social or environmental conditions, and ultimately health. HIA does not evaluate whether a project or plan should or should not be implemented, but rather serves to inform policymakers and planners on how to make a proposed plan, policy or project more likely to promote health and avoid potentially negative health outcomes. In this article, we present the steps, considerations needed to perform an HIA and illustrations of HIAs that have been done.

KEYWORDS: Health Impact Assessments, Social Determinants of Health, public policies

Foundation and The Pew Charitable Trusts, the most urgent health problems facing Americans today – such as asthma, obesity, and heart disease – are influenced more by where people live and work than their genes or what their doctor recommends. Physicians often see patients with diabetes who struggle to make healthy diet choices due to the lack of fresh produce in their neighborhoods. They treat asthmatic patients repeatedly in emergency departments, with multiple medications and courses of steroids, to ameliorate problems caused by poor air quality in their neighborhoods, at their school and/or at their place of work. Patients often want to comply with exercise recommendations, but find that their streets are not safe due to poor street conditions, traffic and/or crime.

Many projects, from transportation, pollution and food policy, are designed to address one aspect of a problem while they may have unintended consequences in another, such as a new shopping center may address concerns of access

to healthy food, but may increase traffic, pollution and decrease space to walk for exercise. When decisions are made to impact the world outside of the doctor's office, it is important to consider the full range of potential health impacts on people is addressed. Given the alarming number of patients with chronic illnesses, such as asthma, diabetes, and high blood pressure, it is imperative that health impact be considered if optimal health and health equity is to be achieved.

As health is a function of many factors not traditionally considered a function of health, the Health Impact Assessment (HIA) has been developed to be a proactive tool that uses a combination of approaches and types of knowledge to measure, capture, and assess a full range of factors that may impact health.

The National Research Council defines HIA as “a systematic process that uses an array of data sources and analytic methods, and considers input from stakeholders to



Dr. Megan Sandel, second from left, spoke on the various ways Health Impact Assessments are used by public and private planners and policymakers during a conference at Brown. Also on the panel were attorneys who work in healthy policy, Liz Tyler Tobin (left), Ellen Lawton and Sara Rosenbaum.

INTRODUCTION

One recent peer-reviewed analysis estimated that genetics was responsible for 20% of health status; healthcare comprised another 10%, and the remaining 70% of health status was attributable to social, environmental, economic and behavioral factors.

According to Dr. Aaron Wernham, director of the Health Impact Project, a collaboration of the Robert Wood Johnson

determine the potential effects of a proposed policy, plan, program, or project on the health of a population and the distribution of those effects within the population. HIA provides recommendations on monitoring and managing those effects."² A major principle of Health Impact Assessment is health equity, and HIA serves to focus on the health impact of policies on the most vulnerable populations.

HIA can be a vital component in the implementation of new policies, programs or plans, especially since most policy decisions are made without considering the health impact. HIA can be successfully applied to a wide array of topics, making this tool vitally useful in a variety of policy decisions. HIA works in the setting of real-time planning and decision-making, which allows the HIA to be flexible and realistic. One of its biggest strengths is that HIA can adapt to the scope, available resources, and timeliness of a decision.

Additionally, HIA recognizes that there may be competing priorities, and HIA practitioners do not expect health to be the only consideration, but thrive to ensure that it is just one of the many factors objectively considered. It is important to realize that HIA should not be utilized for every decision; it adds the most value when health is not already part of the discussion and when the health connections are less obvious. HIA is about maximizing positive health impacts and mitigating as many negative health impacts as possible in a given policy. Most HIAs do not make strict recommendations about whether to do a given policy or not, but rather make specific recommendations about how the policy, program or plan could be made better for maximal positive health impact.

It is essential to be clear about the appropriate use of this assessment tool HIA to evaluate policies, programs, or projects. The following are considerations to keep in mind to determine if this is the tool to use:

- HIA is not used to make the case for why a policy, program or project should be proposed.
- It is not an assessment to understand the impacts of a program or policy once it has been implemented.
- It is not a community assessments tool (i.e., MAPP, CHIP, CHA), but these can be used during the assessment stage of HIA.
- HIA is proactive – it's meant to inform a proposed policy, program or project currently under consideration.
- HIA is the framework that translates that data into well-informed policies.

HIA is not meant to dichotomize a policy, program, or plan as a for-or-against proposition but rather to consider potential health consequences and outcomes to decrease and/or eliminate a deleterious impact. An HIA is a flexible research process that typically involves six steps. These steps include:

STEPS OF A HEALTH IMPACT ASSESSMENT

1. Screening involves determining whether or not an HIA is warranted and would be useful in the decision-making process.
2. Scoping collaboratively determines which health impacts to evaluate, the methods for analysis, and the workplan for completing the assessment.
3. Assessment includes gathering existing conditions data and predicting future health impacts using qualitative and quantitative research methods.
4. Developing recommendations engages partners by prioritizing evidence-based proposals to mitigate negative and elevate positive health outcomes of the proposal.
5. Reporting communicates findings; and
6. Monitoring evaluates the effects of an HIA on the decision and its implementation as well as on health determinants and health status.

Another element central to HIA practice is collaboration and working with stakeholders to design, conduct, and communicate the results of the HIA.² This builds capacity at the local and organizational level to participate effectively, informed by the best scientific evidence, in decision-making that affects health. Conducting an HIA can also help decision makers assess policy proposals, avoid unintended consequences and costs, and advance smarter, cost-effective policies that promote health. Ultimately an HIA should:

- Save costs over the longterm by identifying ways to minimize adverse health outcomes that come with costs such as lost productivity, higher health services utilization, higher rates of disability and premature death.
- Be a flexible process that can be tailored to the timeframe of decision-making, whether policies are made after a day-long deliberation to one that spans years. An HIA generally saves time by offering non-partisan, problem-solving forum that has potential to defuse conflict and resolve policy differences efficiently.
- Promote smart economic development by identifying and addressing potential concerns proactively.

ILLUSTRATIONS OF HIAS USE IN POLICY DECISION MAKING

In the last 15 years, the utilization of HIA has expanded widely across the United States. In 2012, there were 162 completed and in-progress HIAs in the United States conducted in 10 different sectors, ranging from transportation, natural resources, energy and gambling, among others.¹ These are policies where health traditionally would never be considered. The use of Health Impact Assessments allowed policy makers to include health considerations in their decisions.

Example of HIA

One in-depth example of an HIA is a 2012 HIA of Advanced Metering Infrastructure (AMI), by Megan Sandel et al, to evaluate the potential health impacts of the deployment of this AMI for residential customers in the Commonwealth Edison (ComEd) service territory in Illinois.¹ Advanced Metering Infrastructure is a complicated policy that replaces traditional analog meters that measure electricity usage with digital or “smart” meters that communicate with the utility company using two-way internet connections. The two way connectivity allows for variable rates of electricity to be charged for usage during different parts of the day, something that is much more difficult currently. These new meters connectivity have potential benefits that would include giving customers real time information on energy usage, timing usage of appliances at times of cheapest energy. In this way, it has the potential environmental benefits of decreasing overall usage or shifting usage so that electrical companies can avoid using coal fired power plants during the peak times in winter or summer and reduced air pollution.

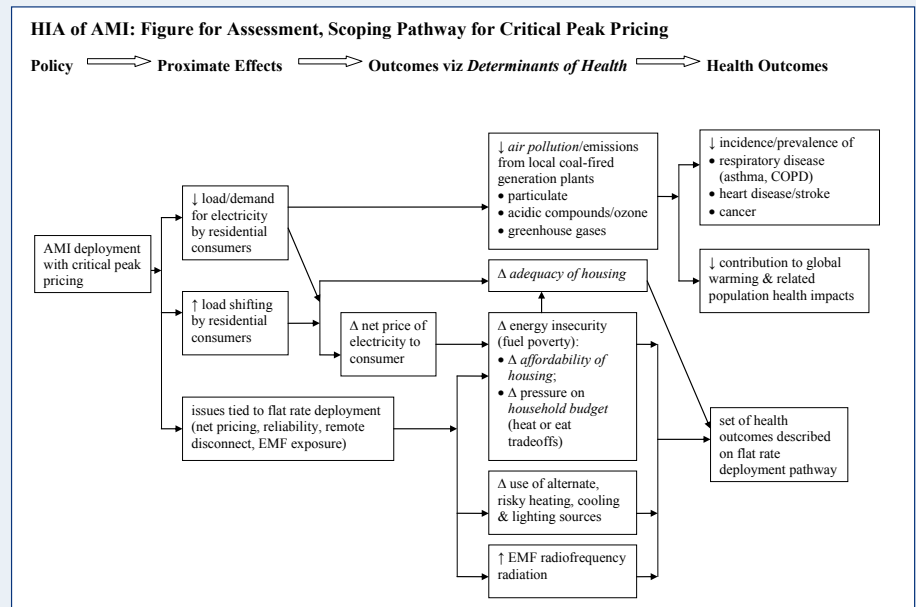
However, the “smart” meters with their two-way connectivity also allow customers to be remotely disconnected from electrical service much more easily than under the current system. This change could lead to potential severe health consequences among vulnerable populations, including children, elderly and people with chronic diseases. Thus an HIA was performed to weigh the potential consequences of the implementation of the ComEd AMI.

The purpose of the HIA on the ComEd implementation was not to determine whether or not AMI meters should or should not be deployed, but rather to highlight the health and safety aspects of AMI for consideration by the Illinois Commerce Commission as it reviewed proposed AMI deployment plans. The data-driven, systematic nature of HIA offered a unique opportunity to incorporate health explicitly into the terms set by the Illinois Commission so that AMI deployment could maximize its potential to promote health and minimize the likelihood that consumers, especially those who are most vulnerable, would be harmed.

This HIA identified three aspects of the AMI deployment that were examined for their potential health impacts on vulnerable customers, defined as five groups that are more vulnerable than the general population. The three question that these HIA practitioners examined were:

1. Whether or not AMI would raise customer rates for electricity service

Figure 1. Scoping pathway used in the HIA of AMI to map the potential health impacts of a particular deployment plan compared to other possible plans.



because of the additional infrastructure investment costs the utility would recover from its customers;

2. Whether or not new pricing programs enabled by AMI would provide benefits to customers or increase costs to vulnerable customers at a time when they can least afford it;
3. Whether or not the use of a remote service switch to disconnect service, particularly in the case of disconnection for non-payment, would have adverse impacts on vulnerable populations.

After the policy was screened, a multiple scoping pathway was developed to help guide the subsequent phases of the project. HIA partners were part of this process to develop the research questions to be answered through various assessment methods. The HIA of AMI employed literature reviews, existing datasets, primary data collected from the ComEd pilot program, and quantitative and qualitative surveys. One example of the scoping pathway is shown in **Figure 1**. The pathway demonstrates the potential benefits of AMI, including reduced load and demand for electricity and therefore reduced air pollution, while showing that changes in price, particularly higher rates, may have higher rates of using risky alternative energy sources or reduce food or medicine expenditures that may adversely impact health.

Upon completion of these analyses, the HIA partners developed a complete summary table to visually display the expected health impacts of AMI deployment. Additionally, as part of the HIA process, the part-

ners developed a set of recommendations that were made to the Illinois Commerce Commission to be taken into consideration upon AMI deployment. Two of the key recommendations were:

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

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.

These recommendations recognized the benefit for AMI, but that many customers needed additional education to reach that potential health benefit. Additionally the extreme negative health risk of remote disconnection was something that should be avoided. The Illinois Commerce Commission currently has adopted these recommendations and has explored requiring the utility companies to track vulnerable populations and the potential impacts of the proposed deployment for the future.

Reference

1. Sandel, M. et al. The Health Impact Assessment (HIA) of the Commonwealth Edison (ComEd) Advanced Metering Infrastructure (AMI) Deployment. April 2012. Available at: www.healthimpactproject.org/resources/body/HIA-of-AMI.pdf

Examples of successful HIAs in the areas of energy, transportation, and food policies demonstrate the scope of policies and projects considered. Examples include:

- In a decision on oil and gas leasing on the North Slope of Alaska, local residents, who are generally supportive of development because of the revenue it brings, opposed expanding leasing into hunting and fishing areas vital to the community's food supply. Collaboration on the HIA contributed to a compromise leasing plan that included several new protections for health, helped overcome a sharp divide and stemmed the threat of litigation. This was also the first HIA to be formally undertaken within the legal framework of the U.S. National Environmental Policy Act and laid the groundwork for Alaska's HIA Program.²
- An HIA that analyzed the implications of a bicycle and pedestrian plan in Clark County, WA, led county planners to create connected bike and walking paths that will help residents stay fit. The HIA was given Active Living Research's 2012 Translating Research to Policy Award.³
- An HIA showed that a Farm to School and School Gardens bill in Oregon would improve health not only by improving kids' diet while at school, but also by reducing hunger and creating jobs in the hard-hit farm industry and rural communities. The HIA offered recommendations for maximizing the benefits. It was also instrumental in generating broad support for a pilot project, which was signed into law.⁴

CONCLUSION

Health Impact Assessment is an important tool when considering the health impacts of policies, programs or plans, especially when they may affect the most vulnerable members of society. HIA is not meant to determine whether or not a new policy, plan or program should be implemented, but rather to identify the potential health impacts of implementation, and to make recommendations on how these policies can be implemented in a way that mitigates negative health impacts. The ultimate goal of an HIA, a proactive measure, brings health into a policy debate so that it can be part of the deliberation and weighed alongside other considerations to maximize the health potential of policy decisions.

References

1. Committee on Health Impact Assessment. Improving Health in the United States: The Role of Health Impact Assessment. Robert Wood Johnson Foundation. January 2011. Available at: <http://www.rwjf.org/content/rwjf/en/research-publications/find-rwjf-research/2011/01/improving-health-in-the-united-states.html>
2. McGinnis JM, Williams-Russo P, Knickman JR. *Health Aff (Millwood)*. 2002 Mar-Apr;21(2):78-93. Review.
3. Wernham A. Thinking Outside the Doctor's Office to Build a Strong, Healthy Nation. *The Hill*. October 2011. Available at: <http://thehill.com/special-reports/healthcare-october-2011/188315-thinking-outside-the-doctors-office-to-build-a-strong-healthy-nation>.
4. Lovasi GS et al. Built Environments and Obesity in Disadvantaged Populations. *Epidemiologic Reviews*. May 2009. Available at: <http://epirev.oxfordjournals.org/content/31/1/7.full.pdf+html>
5. Levy JJ, Buonocore JJ, von Stackelberg K. The Public Health Costs of Traffic Congestion: A Health Risk Assessment. *Environmental Health*. Available at: <http://www.ehjournal.net/content/pdf/1476-069X-9-65.pdf>
6. Harrison RA, Gemmell I, Heller RF. The population effect of crime and neighborhood on physical activity: an analysis of 15,461 adults. *Journal of Epidemiology and Community Health*. January 2007. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2465585/>
7. Wernham A. Health Impact Assessment: A Tool that Can Build a Healthier America. *The Healthcare Blog*. January 2011. Available at: <http://thehealthcareblog.com/blog/2011/01/05/health-impact-assessment-a-tool-that-can-build-a-healthier-america/>
8. Wernham A. Conference Highlights Rapid Growth of Health Impact Assessments in the United States. *The Healthcare Blog*. April 2012. Available at: <http://thehealthcareblog.com/blog/2012/04/22/conference-highlights-rapid-growth-of-health-impact-assessments-in-the-united-states/>
9. Alaska Health Impact Assessment (HIA) Program. State of Alaska. Available at: <http://www.epi.alaska.gov/hia/>
10. Clark County Public Health, Clark County Community Planning. Comprehensive Health Impact Assessment: Clark County Bicycle and Pedestrian Master Plan. December 2010. Available at: www.healthimpactproject.org/resources/document/clark-county-bicycle-and-pedestrian-master-plan.pdf
11. Henderson T. Health Impact Assessment: Oregon Farm to School and School Garden Policy. Upstream Public Health. May 2011. Available at: www.upstreampublichealth.org/sites/default/files/F2SHIA_FINALlow-res_0.pdf

Acknowledgements

We acknowledge help from Dr. Aaron Wernham and the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and Pew Charitable Trusts (www.healthimpactproject.org), for their help with this manuscript. Dr. Sandel would like to acknowledge the Kresge and Robert Wood Johnson Foundations for supporting her time on this paper.

Authors

Emily Suther MA; Research Assistant, National Center for Medical-Legal Partnership
Megan Sandel MD, MPH; Associate Professor of Pediatrics, Boston University Schools of Medicine and Public Health; Medical Director, National Center for Medical-Legal Partnership

Disclosures

Dr. Sandel and Emily Suther work part-time for the National Center for Medical-Legal Partnership in the Department of Health Policy, at George Washington University's school of Public Health and Health Services (www.medical-legalpartnership.org).

Correspondence

Megan Sandel
88 E Newton St
Vose Hall, 304
Boston MA 02118
617-414-3680
Fax 617-414-3679
megan.sandel@bmc.org