

Our Zip Code May Be More Important Than Our Genetic Code: Social Determinants of Health, Law and Policy

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Public health is defined as “what we, as a society, do collectively to assure the condition for people to be healthy.” (Institute of Medicine (IOM), 1988, 2003). This evokes the social determinants of health – where we live, learn, work and play has a greater impact on individual and population health than does access to health care. However, when we discuss health and health disparities, clinical care problems are often framed as the problems with the health-care system. Recently, the Institute of Medicine has moved to make the distinction that in public health, the clinical care system is but one part of the overall health system, which should help to avoid the conflation of health as only a product of medical care (IOM 2010).

In June 2011, Rhode Island Gov. Lincoln Chafee signed a law (RIGL 23-64.1), creating the Commission for Health Advocacy and Equity. The Commission’s mandates are to advise the Department of Health about racial, ethnic, cultural, or socioeconomic health disparities; to advocate for the integration of the activities that will help achieve health equity; to help develop a health equity plan that addresses social determinants of health, not just in the Health Department, but across state government; to align statewide planning activities in developing health equity goals and plans, and to educate other state agencies and organizations on health disparities.

Brown University’s Taubman Center for Public Policy sponsored a seminar series open to the community addressing Social Determinants, Law and Policy. The three-seminar series explored what the social determinants of health are and how we all and policymakers can address health

inequities through law and policy.¹ The first seminar, “Understanding the Social Determinants of Health,” explored the concepts of social determinants and how they can be measured. The second, “Law and Social Determinants: Legal Interventions to Address Health Disparities,” focused on legal tools to promote health equity and healthy communities. The third seminar, “Health in All Policies: Designing Cross-Sector Policies to Improve Health,” considered statutory legislation and institutional policy, local and national, which can increase health equity and promote healthy communities.

This special issue contains a series of papers expanding key themes addressed in the seminars. Making real improvements in the health of our communities, especially the economically, socially and environmentally impoverished communities, requires much more than “fixing” our wasteful, fragmented and misdirected medical-care systems. If we are to achieve health equity, it is time for us to evaluate how to truly shift the dialogue, and not inadvertently replicate the same disparities we are trying to eliminate. We must examine how disparities impact us all across demographics and not only the most vulnerable, though they bear the greater burden. It is our intent with this edition to provide tools to better equip us to evaluate the social determinants of health and ways to take action through law and policy.

Acknowledgements

Many thanks to the A. Alfred Taubman Center for Public Policy & American Institutions at Brown for their primary support and sponsorship of the series and to the other sponsors: Roger Williams University School of Law, The Warren Alpert Medical School of Brown University, The Brown Program in Public Health, and CTRI –Public Health Training Center. Also, special thanks to all the series presenters and moderators, and to the contributing authors of this edition.

Reference

1. For access to the videos from the seminars, see the Taubman Center for Public Policy Archives
<http://www.brown.edu/academics/taubman-center/events/social-determinants-health-law-and-public-policy>
<http://www.brown.edu/academics/taubman-center/events/social-determinants-health-law-and-public-policy-part-2>
<http://www.brown.edu/academics/taubman-center/events/social-determinants-health-law-and-public-policy-part-3>

Social Determinants of Health: A View on Theory and Measurement

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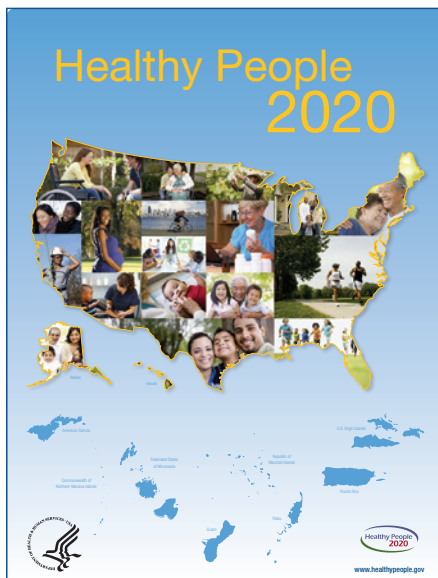
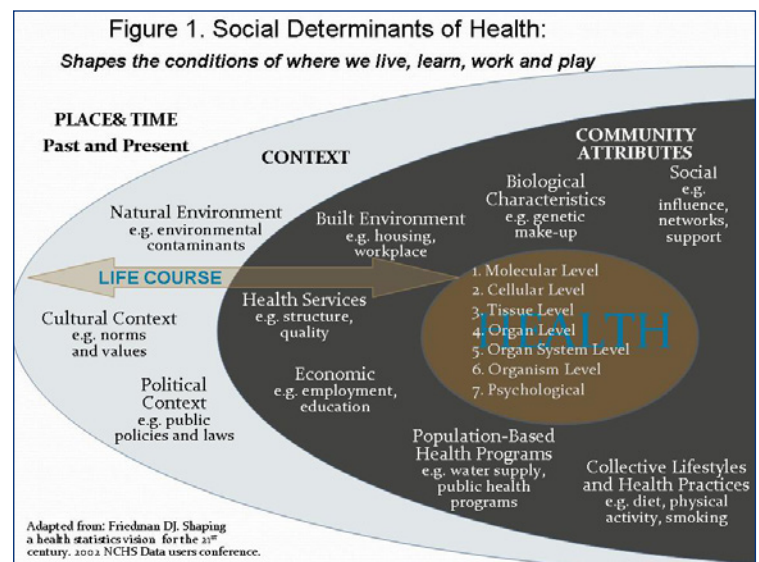
ABSTRACT

The theory and measurement of the social determinants of health featured in a three-part seminar series on Social Determinants of Health, Law and Policy held at the Taubman Center for Public Policy, Brown University in February 2012.¹ The seminar series represents a broader commitment to engage the public, health providers, researchers, and policy makers in dialogue for the purposes of identifying and addressing social determinants of health at community and state levels. This article summarizes and expands upon the first part of the series by defining social determinants of health and exploring methodological debates over their measurement, with a focus on income inequality, racism and discrimination, housing security, and food security. The authors of this article and the members of the seminar series represent the kind of interdisciplinary and applied work necessary for addressing the five key areas of social determinants of health identified in *Healthy People 2020*: economic stability, education, social and community context, health and health care, and neighborhood and environment.²

KEYWORDS: social determinants of health; inequalities; discrimination; insecurity

National Health Service.^{3,4} Since that landmark report, the relationship between socioeconomic status and health (the 'social gradient') has become one of the most persistent and ubiquitous findings in health research. In the United States, the *Healthy People* initiative has spearheaded the national effort to reduce health inequities and broaden awareness of the importance of the social determinants of health.²

Social determinants of health refer to both features of and pathways by which societal conditions affect health. These include income, education, occupation, discrimination, and working/living conditions (see Figure 1).⁵



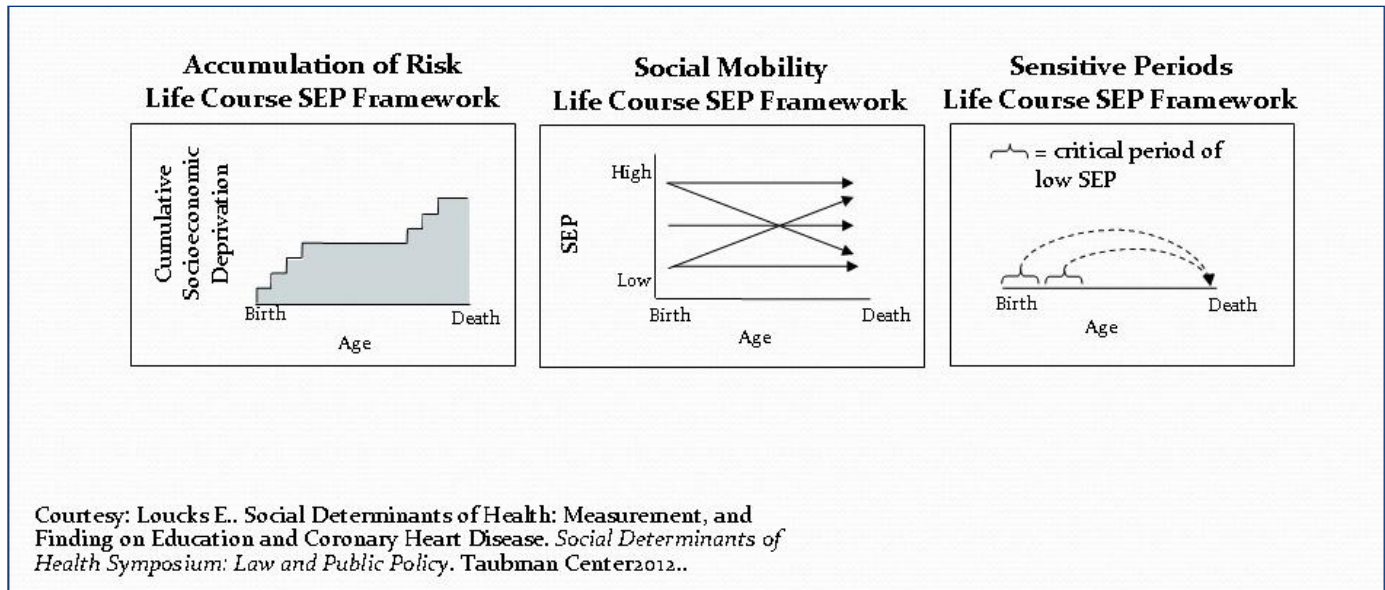
INTRODUCTION

The social determinants of health literature has developed in significant ways over the past 30 years. It arguably gained prominence with the publication of the United Kingdom's *Black Report*, which emphasized the large inequities in morbidity and mortality that exist between lower and upper classes – inequities that persisted despite universal access to health care services under the

Figure 1 illustrates how social conditions influence the health of individuals. Research in this area has examined a wide range of social determinants of health – from community attributes to a more macro-level political context. The social determinants of health examined in this article include income inequality, racism and discrimination, housing quality, and food security. The main goal is to consider how these factors may be affecting our health and how to measure these effects in ways that build toward policy relevance.

Figure 2 demonstrates the framework of life course effects.⁶ Social mobility questions the changes that may occur over a life span (e.g., the impact of starting at a low social position and moving to high position or vice versa). The sensitive periods framework asks if there is a time, especially during childhood, when economic circumstances are of particular

Figure 2. Life course socioeconomic position



importance in the development of the health and wellbeing of an individual. Accumulation of risk considers the build-up of effects over time. The purpose is to develop a conceptual framework with which we can predict health outcomes more accurately and to determine the validity of specific mechanisms as they influence a particular pathway.

On a global level, the World Health Organization's recent Commission on the Social Determinants of Health (CSDH) brought unprecedented attention to social conditions as fundamental causes of disease.⁷ The CSDH sought to synthesize the now-global literature on the social determinants of health, ultimately concluding that "reducing health inequalities is...an ethical imperative. Social injustice is killing people on a grand scale."⁸ Its focus was primarily on between-country inequities (describing the 40-year gap that exists between the worst-off and best-off nations as four decades that are 'denied' to the poor), but the CSDH also examined within-country inequities – pointing to the need to improve the distribution of power, money, and resources.⁸

Income-Based Inequalities

Inequities in health running across the socioeconomic spectrum are perhaps the most consistent empirical finding in the social determinants of health literature. These inequities run as a gradient, from the very bottom of the socioeconomic hierarchy to the top; they do not reflect threshold effects that differentiate the poor from the non-poor.⁹ The steepness of the social gradient varies from place to place and condition to condition, but its presence is widely accepted by health inequity researchers.

Building on empirical work on the social gradient, social determinants of health researchers have gone on to examine a range of other drivers of unnecessary morbidity and preventable mortality. One of the most important extensions of

this work has been Richard Wilkinson's income inequality model, which argues our health is influenced not just by our own income, but also by how income is distributed in the place in which we live.^{10,11} Some of the most striking results have been published using data from the United States; Ross et al. observed that a 1 percent increase in the proportion of income earned by the poorest half of the population can be expected to reduce working-age, all-cause mortality in U.S./Canadian cities by 21 deaths per 100,000 every year.¹²

There is, however, considerable debate over the Wilkinson hypothesis, and researchers continue to grapple with a range of methodological questions of how to test the hypothesis with empirical data.¹³ More than 200 statistical studies have examined the relationship between income inequality and population health, and approximately 90% of these have found at least some support for the hypothesized relationship. However, once control variables are taken into account, this figure drops to approximately 40%.¹⁴ That is, only a minority of studies concludes with full support for the hypothesis, and others give mixed results, with the hypothesis being supported only under some conditions. It is here where the statistical issues pertaining to testing the hypothesis become quite complex and contested, with little agreement in the literature surrounding what kind of variables should be included in statistical models as control variables used to isolate the effect of inequality itself (and, in turn, whether the statistical practice of controlling for the effects of independent variables gives us an evidence base from which to establish causality). There is also no consensus on the geographical level at which the hypothesis should be tested, with some studies being carried out with national data, and other studies being carried out at state / provincial, city, and municipal levels.¹⁵

Despite the ongoing debates over the Wilkinson

hypothesis, it has strengthened the social determinants of health literature by emphasizing the need for a multilevel perspective, one that acknowledges that while health is experienced by individuals, it is ultimately affected by both individual and contextual factors. With this perspective we might consider income inequality as a proxy for capturing of a wide variety of inequalities, the social policies that tolerate them, and the unequal distribution of health protective resources. For example, we can think of the substantial differences in experience of poverty by race through discrimination and segregation. New research examining the health effects of racism / discrimination, housing, and food security, detailed below, illustrate this need for a multilevel perspective.

Racism and Discrimination

This scholarship extends the existing literature on race/ethnic health disparities, moving from descriptive empirical studies documenting population-based patterns toward analysis that explicitly measures exposure to discrimination. In effect, this area of work begins with acknowledging the fundamental patterns of health inequities that exist today in the United States: infant mortality (per 1,000 live births) is 14.0 for African-Americans and 5.7 for non-Hispanic whites;¹⁶ age-adjusted mortality from breast cancer (per 100,000 women) is 35.5 for African-Americans and 25.8 for non-Hispanic whites;¹⁷ and most other indicators follow similar patterns.¹⁸ The latest work in this area goes beyond description, however, by theorizing about and testing the fundamental role of racism and discrimination as drivers of these patterns.

In recent years, several measurement approaches have been developed, including the Experience of Discrimination (EOD) scale¹⁹ and the Everyday Discrimination Scale (EDS).^{20,21} These scales can be incorporated into household surveys; the EOD, for example, asks respondents if they have felt discriminated against in 9 different domains (at school or work; getting a job, housing, medical care, service at a store or restaurant, credit, bank loans or a mortgage; on the street or in a public setting, or from police or in the courts). Likewise, the EDS includes items seeking to measure 'day-to-day unfair treatment' in specific life domains. These scales have been associated with a range of health outcomes in community studies, including hypertension, self-rated health, and psychological distress.²² Theoretical and clinical work has investigated the pathways through which racism and discrimination affects bodily systems, with many studies pointing toward chronic activation of stress pathways.²³

Both the EOD and the EDS measures are entirely self-report in nature, raising a very real concern over validity across the socioeconomic spectrum. As Nancy Krieger observes, "people most affected by discrimination may be least able or willing to say so, even as such experiences may nevertheless affect their health."²¹ Empirical studies have shown a strong association between self-reported discrimination and health among affluent respondents, a relationship that some

studies suggest breaks down among the poor.²⁴

There are real concerns, therefore, that existing measures may underestimate the real effects of racism and discrimination as social determinants of health. Along with the problems of self-report data, research in this area has relied too much on individual-level measurement, with less emphasis placed on community/structural dimensions of racism and discrimination.^{22,25}

Researchers are beginning to explore how the experience of discrimination may affect foreign-born people, tracking exposure to discrimination over time in the United States. Such work offers the possibility of integration with the 'healthy immigrant' literature, enabling a more holistic perspective on the health transitions of immigrants.²⁶ Comparative work is also possible. Researchers in other countries, including New Zealand,²⁷ the United Kingdom,²⁸ and Canada²⁹ have investigated the pathogenic effects of discrimination, though little cross-national work has been done to date.

Critical examination of the frame underpinning these studies is also warranted. As Yin Paradies notes, "the study of racism in health research is concerned, at least at present, with how racism may influence health rather than why racism occurs."³⁰ Consideration of the causes and not just the effects of racism and discrimination further strengthen the argument for a truly inter-disciplinary and cross-sector approach to health disparities research – linking biology and health sciences with political economy, history, and the social sciences.

Housing Security

Housing quality is widely recognized as a critical determinant of health.² It has a significant influence on child health and other outcomes across the life course.³¹ Some of these influences include exposure to physical and biological hazards, affordability, neighborhood quality and insecurity. Often not considered is how the high cost of energy can lead to housing insecurity. If heating bills are not paid a landlord may have the right to evict a tenant for not keeping the unit habitable.³²

Neighborhood quality and conditions matter to health beyond the individual level. Neighborhood segregation and housing conditions vary by race and ethnicity even after accounting for income differences. Public health researchers and advocates must recognize linkages between household access and public policy in creating unhealthy, unstable conditions. Housing policy can be a public health intervention if health is an explicit objective integrated into the design, operation, and evaluation of housing assistance programs.

Food Security

Food security, broadly defined by the U.S. Dept. of Agriculture (USDA) as the ability for all people to have enough food to lead active and healthy lives, is essentially a problem of sufficient access to quality food.³³ Although an increase in available calories and energy intake is often assumed to be

an indicator of food security, those calories are not always nutritious.³⁴ The high cost and availability of food leaves low-income households vulnerable to diet-related health problems as consumption of cheaper foods – usually high in fat, sugar, and salt and low in micronutrient – increases.³⁵ A less immediate cause of food insecurity is policy that can influence household resources creating unforeseen and adverse impacts. For example, policies that influence the cost of heating fuel paid by households can lead to seasonal coping strategies and temporary problems with food access.³⁶

Methods for assessing food security recognize the challenges of measuring a complex, multidimensional phenomenon, which progresses through a continuum of successive stages. Each stage, from low- to high-food insecurity, consists of characteristic conditions, experiences, and behavioral responses. The strategy taken by the USDA and other researchers is to use a variety of indicators to capture the various combinations of conditions, experiences, and behaviors.³⁷ The Food Security Supplement is a validated approach that relies on a set of 18 core indicators.^{38, 39} However, a strong argument can be made for approaches that capture the broader significance of food access, dietary quality, and explore the complex pathways between food security and health. This approach, often aided by qualitative inquiry, can demonstrate how food insecure households cope with variations in food access shaped by their complex and changing environment.^{40, 41}

CONCLUSION

Future work on identifying and measuring social determinants of health requires collaboration between researchers and policy makers for the purposes of generating policy-ready research. The seminar series on Social Determinants of Health, Law and Policy at Brown University is an example of how these dialogues can be framed, identifying key researchers, and the ways in which these interactions can offer fertile ground for interdisciplinary perspectives. This article has offered theoretical and methodological considerations for several key social determinants of health – income inequality, racism and discrimination, housing insecurity, and food security. The challenge ahead for researchers, advocates, and policy makers is to assess how these determinants affect the health status of particular populations, with the ultimate goal of informing all types of policy, not only explicit health policies, about the potential to improve health outcomes.

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Disclosures

The authors have no financial disclosures to report.

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Social Determinants of Health and the Affordable Care Act

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ABSTRACT

Healthy living is mainly seen as a product of good genetics and holistic healthcare in the United States, but a growing field of research is also attributing well-being to social determinants of health (SDH), which are the compounded effects that arise from the concentration or lack of social capital. The Affordable Care Act (ACA) was enacted to promote the overall health of the country and its clauses are calling to attention the health disparities that come from social inequalities, the main sources for SDH. The ACA acknowledges that SDH affects marginalized communities in different ways, and to mitigate their effects, it localizes funding in hopes of empowering individuals and communities, but there is no integrated, multi-prong system for addressing SDH.

KEYWORDS: Social determinants of health, marginalized populations, mitigation techniques, integrated models of care

INTRODUCTION

Historically, improvements in living environments have ushered in higher levels of good health. The creation of a modern sewage system in London during the 1800s was instrumental in curbing the rate of infection for cholera.¹ However, the benefits of the new systems were not equal and the poorer residents were still at disadvantages; the latrine systems for the wealthy had flush-control valves, whereas the latrine systems for the poor were flushed manually, which continued to spread disease.² This trend of unequal benefits to health improvements within a region has continued into the present day, with the least socially advantaged populations confronted with many more health problems. Realistic efforts to improve public health on the whole necessarily should include policies that are designed to mitigate the health disparities that arise from social inequality.

WHAT ARE SDH?

Overall health improvements, such as advances in vaccines, have been beneficial to people across the board, but the social determinants of health are still preventing many groups from reaping the fullest benefits of such advancements.³ Although health is primarily seen through a biomedical



Lt. Governor Elizabeth Roberts is Chair of the Rhode Island Healthcare Reform Commission.

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perspective, the conditions in which people live, work, and play (social determinants of health) act not only to influence one's access to healthcare, but also largely determine the health and rate of illness within communities. Social determinants of health refer to the context in which health arises: the economic, political, social, and cultural conditions of communities and institutions that perpetuate them.^{4,5} Racism, poverty, unsafe neighborhoods, and lack of education are some of the many SDH that create health inequity through effects such as elevated stress levels, higher rate of uninsured patients, and less access to healthy foods.⁶⁻⁸

Social determinants of health disproportionately affect already marginalized populations, exacerbating the material and psychosocial inequalities that they may already face. Wealth and income are main contributors to SDH; they are important to preventative measures, such as living in safe neighborhoods, as well as curative measures, such as being able to afford medical attention for illnesses. Social inequality not only prevents people from treating their current illnesses, but also creates health problems in itself. The rate of mortality among different social classes is stark; many of the working poor are in manual labor jobs and research has shown that the health of manual workers declines more rapidly during the working years than does the health of non-manual workers.⁶ Some SDH, however, are indirectly associated with wealth, but also compound the stresses

of working and living conditions. In Rhode Island, many undocumented immigrants (estimated at 35,000 people in 2007) face a unique combination of working low-wage positions, encountering language barriers to health care, and fearing detection from deportation agencies, all of which compound with other SDH to create conditions that exacerbate undiagnosed illnesses and poor health.⁷

There is increasing interest in the field of SDH and a growing body of evidence that demonstrates the roles of SDH in creating health inequity.⁸ Consequently, because the SDH are also contributors to social inequality in general, research has discussed the importance of the government in promoting social capital and equity by way of mitigating SDH.⁹ Unequal social capital continues and compounds through the effects of SDH, and disease prevention can arise from the promotion of social justice. Healthcare services – that is, direct medical attention – function both as curative and preventative biomedical strategies, but equitable healthcare access alone does not overcome the complex ailments that stem from SDH. Mitigating social determinants of health, in addition to improving equitable access to health care, are keys to promoting healthy communities.

SDH MITIGATION: THE AFFORDABLE CARE ACT

The Affordable Care Act intends to bring about healthcare reform for the United States and it addresses aspects of SDH in a two-pronged approach that emphasizes both individual and community responsibility for well-being. The act outlines different classes of resources for these two scopes of responsibility: Its efforts to encourage desirable actions at an individual level include funding allotments for public information campaigns to help people make informed choices. Additionally, to contextualize health improvement efforts, grants are given at a community level for local organizations.

INDIVIDUAL RESPONSIBILITY

The goal of reducing health disparities is central to the ACA's efforts of increasing healthy choices, but the nuances of SDH – in particular, its community-specific disparities – are unaddressed at the individual level. In Section 4004 of Title IV (Prevention of Chronic Disease and Improving Public Health), there are provisions related to the dissemination of disease prevention tips and techniques.¹⁰ Additionally, the act will dedicate funds for the creation of an Internet portal that allows individuals to track their own health. Although they are improvements overall, without targeting specific at-risk populations through such efforts as language translation and rural dissemination, even higher overall population health may not translate to higher health for communities already affected by SDH.

While individual empowerment is an important cornerstone of health, the ACA public information campaigns and Internet health portals rely almost entirely on person-

al choices to overcome the institutionalized social determinants of health. This practice follows what Baum et al describe as “a long-standing Western biomedical and individualistic concept of health.”¹¹ By placing the responsibility of obesity reduction, for instance, on the individual to make more informed diet choices, the ACA fails to recognize that many low-income neighborhoods are food deserts, where fresh fruits and vegetables are scarce. In contrast, processed and shelf-stable foods are more abundant, which can lead to poor nutritional health.¹² This approach falls short, as the ACA's individualized efforts are not prioritized for especially disadvantaged populations, but for the average American.

COMMUNITY EMPOWERMENT

For the disadvantaged populations, however, the ACA has taken a larger community-level scope to mitigate SDH. The Secretary of Health and Human Services is enabled with the authority under Subtitle C to award monetary grants to community organizations and departments that are able to address healthy living in certain areas that have “racial and ethnic disparities, including social, economic, and geographic determinants of health.”¹³ The Community Transformation Grants, while created primarily to address community-specific health concerns, also serve as a tool to improve the holistic well-being of marginalized communities. The grants' guidelines call for neighborhood safety as well as infrastructure for healthy living, among others.

Although the Community Transformation Grants do reflect a national acknowledgement of SDH, the ACA does not create comprehensive programs to address mitigation techniques for SDH. The grants, while aimed at localized solutions, are not part of a larger, integrated system that seeks to prevent SDH, as well as monitor their salience. Without a cohesive system that strategically targets SDH from many angles, the ACA's main line of SDH mitigation will be through the Community Transformation Grants. While it is most likely the case that all cities have populations that are more susceptible to SDH than others, these relatively small grants are not standard for all states and their communities; instead, communities with the resources to apply for the grants and are not guaranteed to have a winning application.¹⁴ Compared to the complexity of the integrated-care model that the ACA mandates for healthcare reform, the simplicity in which the ACA addresses SDH reveals that mitigating social determinants is not a main priority for the legislation.

Even if there were an integrated model for SDH mitigation, Rhode Island faces a uniquely challenging position to alleviate effects of SDH because the state has several communities of resettled refugees, in addition to dense minority urban cores. Its refugees potentially face language barriers as well as psychological trauma due to the events that led to their emigration from their home countries. In particular, many Cambodian Americans in Rhode Island are refugees

due to the reign of Pol Pot and his genocidal mission. As such, migration woes of small communities can compound with inequalities faced by ethnic groups on the whole and result in many more SDH affecting them. The ACA's reliance on community organizations and local departments to implement SDH mitigating policies may not address the full SDH spectrum that affects marginalized populations within even larger marginalized communities.

CONCLUSION

The development of an American healthcare system that works to eliminate health disparities rests on the importance of action aimed specifically at the social determinants of health. In particular, integrated policies should be explicit in mitigating SDH through many channels. Additionally, SDH policies ideally should integrate local involvement of community-based organizations, which can elucidate problems plaguing specific communities and provide health assessments of the policies. In its fullest, the healthcare system and its policies that aim to create healthy communities must also be synergistic to policies already in place that promote education, economic justice, and equitable services. Social determinants of health are as much related to the health of communities as they are to the general well-being of its populations.

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Disclosures

The authors have no financial disclosures to report.

Disclaimer

The views expressed herein are those of the authors alone.

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Optimizing the Health Impacts of Civil Legal Aid Interventions: The Public Health Framework of Medical-Legal Partnerships

ELLEN LAWTON, JD; ELIZABETH TOBIN TYLER, JD

ABSTRACT

Research documents the significance of the social determinants of health – the social and environmental conditions in which people live, work and play. A critical foundation of these social and environmental conditions are laws and regulations, which construct the environments in which individuals and populations live, influencing how and when people face disease. Increasingly, healthcare providers, public health professionals and lawyers concerned with social determinants are joining forces to form Medical-Legal Partnerships (MLPs) which offer a preventive approach to address the complex social, legal and systemic problems that affect the health of vulnerable populations. Now in more than 500 health and legal institutions across the country, including Rhode Island, MLP is a healthcare delivery model that integrates legal assistance as a vital component of healthcare. This article explores the many benefits of the MLP model for improving patient health, transforming medical and legal practice and institutions and generating policy changes that specifically address health disparities and social determinants.

KEYWORDS: health disparities, social determinants, medical-legal partnership, healthcare reform

INTRODUCTION

Although the healthcare system plays a role in mitigating the unwanted health effects of poor social conditions, the traditional medical treatment model will never adequately address nor prevent these problems. An asthmatic child living in a mold-infested home will continue to experience respiratory problems, no matter how much medicine is administered, unless the unhealthy housing conditions are remediated. In fact, the key to better health is improving the social determinants of health – the social and environmental conditions in which people live, work and play. An important foundation of these social and environmental conditions are laws and regulations, which construct the environments in which individuals and populations live, influencing how and when people face disease.

Increasingly, healthcare providers, public health professionals and lawyers concerned with social determinants are



Dr. Dannie Ritchie and attorney Elizabeth Tobin Tyler at a conference on social determinants held at Brown University's Taubman Center for Public Policy.

joining forces to form Medical-Legal Partnerships (MLPs) which offer a preventive approach to address the complex social, legal and systemic problems that affect the health of vulnerable populations. MLP is a healthcare delivery model that integrates legal assistance as a vital component of healthcare. MLP is built on three key beliefs: (1) the social, economic and political context in which people live has a fundamental impact on health; (2) these social determinants of health often manifest in the form of legal needs¹; and (3) attorneys have the special tools and skills to address these needs. MLP brings legal and healthcare teams together to provide high-quality, comprehensive care and services to patients who need it most.²

MEDICAL-LEGAL PARTNERSHIP – LINKING LAW AND HEALTH FOR PATIENTS AND COMMUNITIES

In the early 1990s in Boston, the idea of bringing legal teams into healthcare settings to address health-related legal needs developed and has spread throughout the United States.

Twenty years later, over 500 health institutions (hospitals, health centers and specialty services such as HIV, oncology and geriatric care) and legal institutions (legal aid programs, bar associations and pro bono law firms) partner to help patients and transform the systems that serve vulnerable people: veterans, the elderly and the poor.³ The MLP model has been promoted by the American Bar Association,⁴ the American Academy of Pediatrics,⁵ and the American Medical Association.⁶ It has been studied and adopted in Australia⁷ and other countries as a key strategy to address the social determinants of health.

Analogous to primary healthcare, MLP's focus is on early detection and prevention of legal problems and health crises. Key to a successful MLP program is healthcare engagement – the host institution must be committed to support and integrate legal expertise and services. MLPs are generally funded through shared financial support from the host health care institution, partnering legal aid program, law firm or law school, as well as foundation grants. Increasingly, health care institutions support MLP programs with the same funding streams used for other key health-care team members including community health workers, case managers and patient navigators. MLP programs vary in size, scope and target population, but they share three core activities: (1) direct legal care; (2) transformation of health and legal institutions, especially in clinical practice; and (3) policy change at the local, state and federal level.

Figure 1



Legal Assistance

MLP attorneys provide on-site assistance to patients needing legal help in the form of consultations, brief advice and direct legal representation. Patients are referred to attorneys by frontline clinicians – social workers, nurses and physicians – who are trained to screen for and identify patients struggling with unmet legal needs. Many MLPs use the I-HELP assessment tool to screen for unmet legal needs: Income/Insurance; Housing and Utilities; Education/Employment; Legal Status (Immigration); Personal/Family Stability. Attorneys communicate frequently with healthcare team members and update them on advocacy outcomes. In this

way, MLP is much more than a referral service — it is an integrated approach to health and legal services that facilitates critical, efficient, shared problem solving among health and legal teams who care for patients with complex health and legal needs.

Safe Home for Freddie – An MLP Case Example

When the chest pains got really bad, Freddie, who was mildly developmentally delayed, finally decided to go to the doctor. His physician had diagnosed him with a cardiac problem and gave him a prescription to fill, but in the meantime, his mother had died, and he was struggling to figure out what to do with her estate and her debts. After two days in the hospital recuperating from a mild heart attack, the care team was concerned about where Freddie would be discharged to. He claimed to have no relatives, and said that he couldn't live in his mother's house anymore "because it was being sold".

The MLP legal team worked with Freddie to understand the status of his mother's estate, and resolved a pending tax complication that would allow him to reside in the home with the right community supports. The legal team also worked with the health care team to identify additional community resources for Freddie, and explored stand-by guardianship options for Freddie in the event of another hospitalization.

Transforming Health and Legal Institutions and Practices

MLPs work to transform health and legal institutions that serve vulnerable populations by training frontline health care teams to screen for, identify and refer patients with potential legal needs. The teams facilitate joint data tracking of program impact and the appropriate documentation of legal information within patient medical records. They participate in institutional efforts to improve internal systems to better serve patients and families. Through frequent interaction with patients, clinicians and the healthcare system, the MLP team – healthcare and legal members – are uniquely positioned to identify patterns of unmet need among populations, as well as opportunities for institutional and systemic improvement to efficiently address those needs.

Policy Change

MLPs leverage healthcare and legal expertise to enact multi-level policy change. To improve local, state, and federal laws and regulations that impact the health and well-being of vulnerable populations they (1) ensure compliance with existing health-promoting laws, (2) support enactment of new or amended health-promoting laws and regulations, and (3) oppose enactment of health-harming laws and regulations.

CONNECTING LEGAL & HEALTH NEEDS

The legal community claims a singular goal as justice – and for vulnerable populations, ensuring access to justice.

However, there are insufficient legal resources available for low-income Americans. For example, there are an estimated 429 people per lawyer in the general population; but there is only one legal aid attorney for every 6, 415 people in poverty.⁸ The American Bar Association estimates that low-income individuals have an average of 2-3 unmet legal needs, including access to safe, affordable housing and disability benefits and services.⁹

The medical and public health communities' goal is to promote and protect health. But as legal interventions start to emerge as a solution to intractable social determinants that negatively affect health, it makes sense for the legal community to see health as a key goal for its constituents – and to better understand and leverage the healthcare landscape that touches virtually everybody in the United States. Because the system of legal aid services for the poor is vastly insufficient and access to civil legal services is pivotal to secure or maintain health for vulnerable members of our communities, the integration of legal service into the healthcare system is even more critical.

THE MULTILEVEL IMPACT OF MEDICAL-LEGAL PARTNERSHIP

Significant strides have been made to demonstrate the impact and efficacy of medical-legal partnership. Gaps exist, but pilot studies show improvement in key MLP domains.

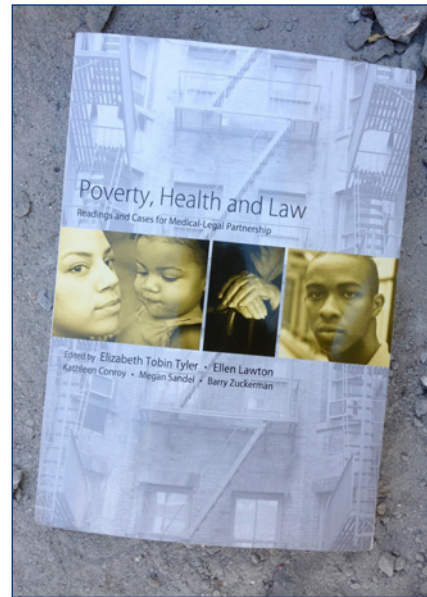
Improvements in the health and wellbeing of vulnerable patients: A 2010 study in California found improvements in general health through introduction of MLP¹⁰; and a 2011 study in Atlanta found that health improved for patients with chronic diseases such as sickle cell when certain legal needs were addressed by MLP programs.¹¹ Other studies indicate that the benefits reported by patients include a reduced stress level, positive effect on family and loved ones, improved financial situation, and better adherence to treatment regimens and medical appointments.^{12,13}

Cost savings and return on investment for host institutions: Several studies have demonstrated significant returns on investment in recouped health insurance costs and other benefits for hospitals with patients served by MLP. An MLP program in Buffalo, New York recovered nearly \$1M in healthcare recovery dollars over a three-year period,¹⁴ and a program in rural Illinois demonstrated an average 271% return on investment and a total of \$4 million in relieved healthcare debt for patients between 2002 and 2009.¹⁵

Improved Clinical Workforce: MLP has been shown to transform the practice of law and medicine for healthcare and legal professionals.¹⁶

HEALTHCARE REFORM AND THE PATIENT-CENTERED MEDICAL HOME

The massive restructuring of the healthcare system that will take place over the next 10 to 20 years will value innovative



This comprehensive text for medical-legal education, focused on social determinants, law and policy, is now used in law and medical schools across the country.

interventions that improve the health of everyone, especially vulnerable (and costly to serve) children and adults. One important opportunity is the integrated care model exemplified by the “patient-centered medical home.” Alongside social workers, patient navigators, healthcare providers and other professionals who coordinate their services within the medical home, legal professionals can help ensure that patients' basic needs are met and legal rights are enforced. MLP serves as both the medical and legal home for patients and their families. The one-stop shopping approach can be enormously helpful to patients who may have a difficult time with transportation, cannot take time from work or school for appointments, or are coping with multiple stressors or chronic, debilitating conditions.

MEDICAL-LEGAL PARTNERSHIP IN RHODE ISLAND

At the forefront of the MLP movement in 2002, the Rhode Island Medical-Legal Partnership for Children (RIMLPC),¹⁷ was the fifth partnership in the country. The legal team is on-site at Hasbro Children's Hospital to provide legal assistance to families referred by the primary care clinics. Law students from Roger Williams University School of Law and medical students from the Alpert Medical School at Brown work on-site with the MLP team through internships and clerkships. Rhode Island has also been at the forefront of curriculum development for MLP. Since 2003, RWU Law and the Alpert Medical School have offered a joint course each fall for law and medical students, entitled, *Poverty, Health and Law: The Medical-Legal Partnership*. This course led to the publication of *Poverty, Health and Law: Readings and Cases for Medical-Legal Partnership*,¹⁸ a joint effort of Professor Liz Tobin Tyler and the National Center for Medical-Legal Partnership. This comprehensive text for medical-legal

education, focused on social determinants, law and policy, is now used in law and medical schools across the country.

MLPs – in Rhode Island, around the country and the world – are transforming the way health is understood, the way medicine is practiced, and the way the healthcare system responds to the needs of vulnerable populations, including how resources are allocated.

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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.

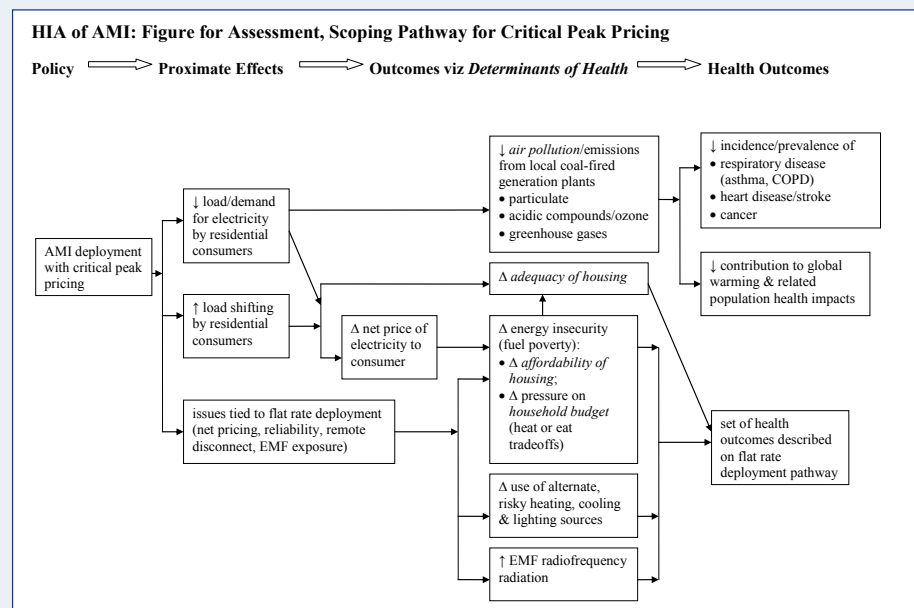
However, the “smart” meters with their two-way connectivity also allow customers to be remotely disconnected from electrical service much more easily than under the current system. This change could lead to potential severe health consequences among vulnerable populations, including children, elderly 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 questions 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.

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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.

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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.

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Health in All Policies: A Start in Rhode Island

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ABSTRACT

In Rhode Island, health care access, whether measured as having a regular source of care or as having health insurance, is better than the U.S. average. However, health care access does not necessarily translate into better health outcomes. Rhode Island has not fared better than the rest of the nation in ending or decreasing health disparities across socioeconomic and racial demographics in spite of improved access to quality health insurance products. In June 2011, law RIGL 23-64.1 directed the establishment of a Commission of Health Advocacy and Equity. It requires a cross-section of state agency and community members to focus on the social determinants of health, and prepare biennial reports with public participation. The law will serve to remind the government and the public that objectives for the well-being of the population are best achieved when all sectors include health as a key component of policy development.

KEYWORDS: social determinants of health; segregation; equity; health in all policies; health disparities



Patricia A. Nolan, MD

INTRODUCTION

In Rhode Island, health care access, whether measured as having a regular source of care or as having health insurance, is better than the U.S. average.^{1,2} (See trends, Table 1, Health care Coverage/Access to care). Rhode Island's Rite Care ranked among America's Best Medicaid Plans from 2005–2008.³⁻⁵ America's Health

Ranking 2010 ranked Rhode Island in the top 10 states as measured by access to care, overall satisfaction, prevention measures, and treatment outcomes. However, health care access does not necessarily translate into better health outcomes. Rhode Island ranks poorly on health indicators such as binge drinking, children in poverty, preventable hospitalizations, and cancer deaths.⁶⁻⁸ Within the state in 2013,⁹ Providence County followed by Kent County had the worst

health outcomes. Bristol County ranked first. These rankings parallel the socioeconomic disparities of the state, with Providence County being the poorest and Bristol the wealthiest.

Rhode Island has not fared better than the rest of nation in ending or decreasing health disparities across socioeconomic and racial demographics in spite of improved access to quality health insurance products. On outcomes of preventable diseases such as coronary heart disease and diabetes, Rhode

Table 1. Health Care Coverage/Access to Care

Percent report No to the question: Do you have any kind of health care coverage?	General US Population		Hispanic		African American		Other	
	National (US) Median %	Rhode Island (RI) Median %	US%	RI%	US%	RI%	US%	RI%
1996 (CI)	12.9	10.5 (8.8-12.2)	27.3	N/A	16.9	9.1 (2.5-15.7)	14.5	N/A
2000	11.9	11.1 (9.7-12.5)	28.2	26.3 (19.7-32.9)	17.1	19.3 (10.9-27.7)	15	N/A
2003	14.5	11 (9.7-12.3)	35.1	31.6 (24.8-38.4)	18.7	15 (5.3-24.7)	19.1	16.2 (7.7-24.7)
2006	14.5	11.3 (9.8-12.8)	40.8	40.5 (33.0-48.0)	19.3	N/A	15.1	N/A
2010	15	12.3 (10.7-13.8)	30.4	36.9 (28.6-45.1)	20.5	N/A	16	13.2 (6.8-19.6)

CI = Confidence Interval

N/A = Not available if the unweighted sample size for the denominator was < 50 or the CI half width was > 10 for any cell, or if the state did not collect data for that calendar year.

Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, [1996, 2000, 2003, 2006, 2010]

Island looked the same or worse than the rest of the nation (See Table 2 Health Status Trends) despite our better insurance access. These outcome indicators demonstrate that we cannot expect success in reducing health disparities if we limit our focus only to access to medical care, adding to the “considerable evidence that social and economic conditions – apart from access to and quality of medical care, which have undeniable importance – play a fundamental, powerful and pervasive role in the health of populations.”^{10,11}

Public health leaders have worked to reshape strategies to improve the health of communities and eliminate health disparities. A theoretical framework underlying these revised strategies is the Social Determinants of Health. The concepts of social determinants of health help us move away from the central clinical focus on individual patients. This framework allows us to consider the roles of physical, social and political environments in predicting the health of communities. Among major strategies drawn from the framework of the Social Determinants of Health is consideration of the health impact of policies, even though the policies may have been intended for a completely different purpose.

Scott Burris¹² states that research in social epidemiology has shown convincingly that population health is shaped by fundamental social conditions with consistent correlations across populations between health and various measures of social and economic status. Social arrangements account for an important fraction of population health disparities. However, it still remains difficult for many Americans (health care workers, individuals, and policy makers alike) to embrace the idea that an individual person is not in complete control of his or her own health. Lasker *et al*¹³ discuss how the policy environment discourages or enables various organizations to interact. This work elaborates on problematical social and economic conditions to consider the infrastructure that reinforces these conditions and increases the resistance to change.

METHODS: USING MEASUREMENT TO CHANGE POLICY AND SHIFT THE DIALOGUE

In 2003, a coalition of multi-disciplinary academicians, public health officials, adult education practitioners, community-based organizations, minority business owners,

Chronic Disease²	General US Population		Hispanic³		African American		Asian	
	US	Rhode Island (RI)	US	RI	US	RI	US	RI
Coronary Heart Disease								
2005	144	177	118	62	171	179	81	DNA⁴
2006	135	161	106	77	162	122	77	
2007	126	153	98	77	151	166	71	
Diabetes Related Death								
2005	77	77	93	45	132	162	58	DNA
2006	74	78	86	86	127	116	55	
2007	73	74	84	61	124	123	54	

¹ CDC Wonder Database for Healthy People 2010 age adjusted per 100,000 standard population
² Years and indicators chosen according to available comparable data to demonstrate trends.
³ Health statistics tend to be better than the US Hispanic population. This is most probably related to a larger recent immigrant population resulting in the Latino Paradox. A good summary of this phenomenon is explained in the PBS episode 4 the documentary series Unnatural Causes: “Is Inequality Making Us Sick?” Variation in rates depend on place of origin, with Cubans fairs the best, next Puerto Ricans and Mexican American the worst - see CDC Wonder Data on Diabetes Related Deaths.
⁴ DNA- Data have not been analyzed

and community members was formed to work on issues of health disparities and equity in Rhode Island. The work started with and included grounding in a conceptual framework for taking action. The initial premise was that how you see a problem drives how you create solutions and we agreed to work from an ecological and social determinants of health framework. From this approach, disparities in longevity and chronic disease burden among diverse communities can be correlated with societal inequities.

From an ecological approach with the aim to take action on health disparities, the coalition agreed that the usual socioeconomic measures such as income, poverty, education, access to health insurance, and access to health care are indicative but not sufficient to explain health disparities even when disaggregated for differing racial ethnic populations (Table 3 a, b and c Socio-Economic Status, page 33 and Graphs 1a–3b, Select Education Indicators, page 34). The cross-section analysis of the commonly used indicator, income, is based on hourly wages and does not account for other forms of assets such as wealth, eg. homeownership. Another commonly used indicator, education, is not sensitive to variations in quality of education. We considered other types of data analysis that might better capture forms of discrimination and chose segregation.

The addition of segregation indices to indicators of socioeconomic status helps expand our solution sets. Segregation measurement has been described by Massey and Denton^{14,15} as having essentially five dimensions: unevenness/dissimilarity, exposure, centralization, concentration, and clustering, the definitions of which can be found in Iceland *et al*, U.S. Census Bureau, Series CENSR-3, Racial and Ethnic Residential Segregation in the United States: 1980–2000.¹⁶ Why are segregation indices key to understanding social determinants of health in Rhode Island? It can expose the extreme isolation experienced by many racial and ethnic populations, better reflecting the institutional arrangements and the legacy of discrimination that continue today. Second, any one

Table 3a. Socio-Economic Status ¹								
Economic and Education Indicators	General Population		Hispanic		African American		Asian/Pacific	
	National (US)	Rhode Island (RI)	US	RI	US	RI	US	RI
Median household income ²	\$51,914 +/-89	\$54,904 +/-645	\$41,534 +/-116	\$33,679 +/-1,543	35,194 +/-104	\$34,699 +/-2,436	\$68,950 +/-349	\$53,357 +/-4,292
Percent 25 and over	%	%	%	%	%	%	%	%
with less than 9 th grade	6.2 +/-0.01	7.0 +/-0.03	23.1 +/-0.1	23.6 +/-1.7	5.6 +/-0.01	12.1 +/-1.4	8.3 +/-0.01	13.0 +/-2.0
9 th to 12 th grade, no diploma	8.7 +/-0.01	9.4 +/-0.03	15.4 +/-0.1	16.3 +/-1.4	13.6 +/-0.01	12.7 +/-1.4	6.0 +/-0.01	8.0 +/-1.7
High School graduate or higher (includes equivalency)	85.0 +/-0.01	83.7 +/-0.04	61.5 +/-0.2	60.8 +/-1.8	80.9 +/-0.1	75.2 +/-1.7	85.7 +/-0.1	79.0 +/-2.5

¹source: U.S. Census FactFinder2 American Community Survey 2006 – 2010
² Large differences between Census 2000 and 2010 report of RI Asian Median Household Income at \$36, 473 in 2000 and \$53,357 in 2010 prompted a disaggregated analysis of Southeast Asian refugee population and varying Hispanic populations for this paper; see tables in Tables 3b and 3c.

Table 3b. Socio-Economic Status										
Economic and Education Indicators	Hispanic Population		Dominican		Mexican		Puerto Rican		Cuban	
	National (US)	Rhode Island (RI)	US	RI	US	RI	US	RI	US	RI
Median household income	\$41,534 +/-116	\$33,679 +/-1,543	\$28,612 +/-2,324	\$28,612 +/-2,324	\$40,588 +/-123	\$37,565 +/-5,088	\$38,426 +/-410	\$25,842 +/-4,819	\$43,857 +/-582	\$66,546 +/-39,675
Percent 25 and over with	%	%	%	%	%	%	%	%	%	%
less than 9 th grade	23.1 +/-0.1	23.6 +/-1.7	21.4 +/-0.4	23.6 +/-2.4	27.4 +/-0.1	18.8 +/-4.7	11.4 +/-0.2	17.5 +/-3.0	12.9 +/-0.3	6.8 +/-5.7
9 th to 12 th grade, no diploma	15.4 +/-0.1	16.3 +/-1.4	14.0 +/-0.3	14.8 +/-2.4	17.2 +/-0.1	17.0 +/-4.6	15.2 +/-0.2	21.7 +/-2.8	11.1 +/-0.3	6.3 +/-5.8
High School graduate of higher (includes equivalency)	61.5 +/-0.2	60.1 +/-1.8	64.6 +/-0.5	61.5 +/-2.8	55.5 +/-0.2	64.1 +/-6.5	73.4 +/-0.2	60.7 +/-3.2	76.0 +/-0.3	86.9 +/-7.8

source: U.S. Census FactFinder2 American Community Survey 2006 – 2010

Table 3c. Socio-Economic Status										
Economic and Education Indicators	Asian Population		Cambodian		Laotian		Vietnamese		Hmong	
	National (US)	Rhode Island (RI)	US	RI	US	RI	US	RI	US	RI
Median household income	\$68,950 +/-349	\$53,357 +/-4,292	\$49,870 +/-1,587	\$42,397 +/-6,534	\$55,119 +/-1,471	\$55,357 +/-22,304	\$55,132 +/-676	\$52,039 +/-19,470	\$46,634 +/-1,558	\$85,294 +/-20,298
Percent 25 and over with	%	%	%	%	%	%	%	%	%	%
less than 9 th grade	8.3 +/-0.01	13.0 +/-2.0	25.3 +/-0.9	34.7 +/-7.3	21.9 +/-0.9	26.9 +/-8.6	15.0 +/-0.3	9.3 +/-7.4	31.8 +/-1.4	30.0 +/-17.1
9 th to 12 th grade, no diploma	6.0 +/-0.01	8.0 +/-1.7	11.9 +/-0.5	13.8 +/-5.3	11.9 +/-0.7	19.8 +/-6.5	13.4 +/-0.3	16.9 +/-13.1	6.0 +/-0.5	1.7 +/-3.2
High School graduate of higher (includes equivalency)	85.7 +/-0.1	79.0 +/-2.5	62.8 +/-0.9	51.4 +/-7.3	66.2 +/-0.9	53.3 +/-9.9	71.6 +/-0.4	73.7 +/-15.4	62.1 +/-1.5	68.3 +/-16.9

source: U.S. Census FactFinder2 American Community Survey 2006 – 2010

indicator of a high level of segregation (for most indices calculated as ≥ 0.6) has deleterious socioeconomic consequence. But as the research of Massey and Denton demonstrates, hypersegregation, which is the accumulation of the negative effects across dimensions, has a multiplicative impact in socioeconomic impact and correlates with poor health outcomes.¹⁷ Table 4 (p 35) shows the R.I. residential segregation indices and demonstrates how hypersegregation exists across three dimensions for African Americans in Rhode Island, while Figure 1 (p 35) reveals aspects of isolation and clustering for racial/ethnic populations in Providence.

Lu Ann Aday and colleagues in *Reinventing Public Health: Policies and Practices for a Healthy Nation*¹⁸ states, “to effectively improve population health and reduce health disparities, policymaking in a variety of domains must take into account policies that address the fundamental social, economic, and ecological determinants of health.” Aday’s proposed analytical framework is one which works at both macro and micro levels of policy. It provides tools to address the goal of integrated policy analysis, rather than serial or single policy analysis, which are less commonly integrated into public health policy and practice. In particular, it considers sustainable development, economic development, community development and human development. In addition, effectiveness, efficiency and equity criteria are used to assess the impacts of current and proposed policies on the health of populations.

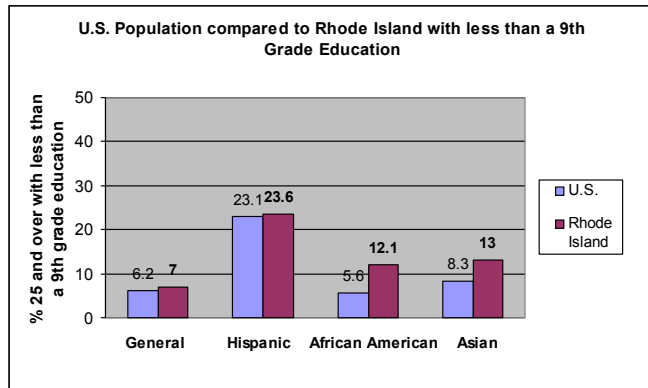
From an ecological lens, it can be seen that as individuals, we may have more or less control and influence over our own social and physical environments and those of others. Individuals who are disenfranchised by income, education, social status, segregation, or disability may have even more limited capacities. We argue here that Aday’s *variety* of domains should be taken seriously and include assessing and shaping

institutional policies to support healthiness and not only in governmental and political policies. We have the big work of assessing laws, regulations and governmental decisions, advocating for assessing health impacts and promoting governmental policies which improve community health. We also have the smaller policy decisions to consider, those in our own institutions, practices, and organizations.

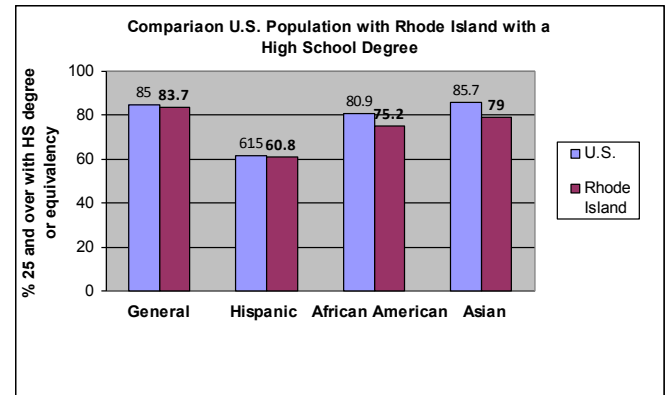
The result of our approach led us to identify a number

of areas of action to address equity; one of which was to address institutional policies through laws and regulations to guarantee sustained attention to the process of the social determinants of health demonstrated by the data for Rhode Island. The coalition worked with legislators to address the conditions that prevent Rhode Island from reducing health disparities. After a number of attempts to pass legislation to address the social determinants of health through the

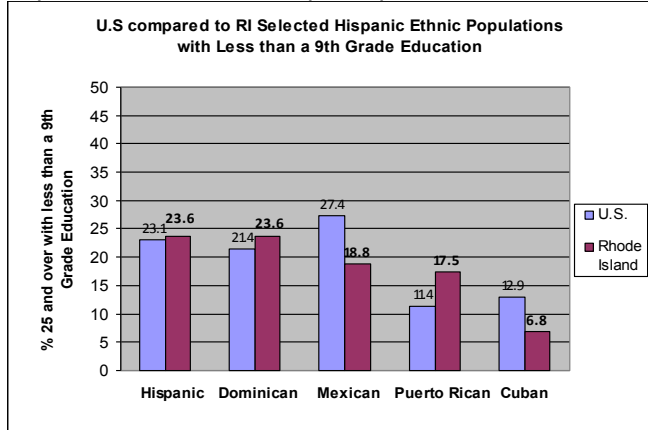
Graph 1a. Education for Crude Race/Ethnic Populations with less than 9th Grade



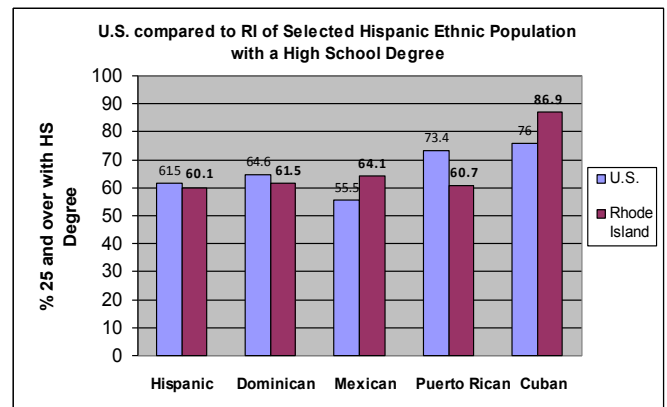
Graph 1b. Education for Crude Race/Ethnic Populations with HS Degree



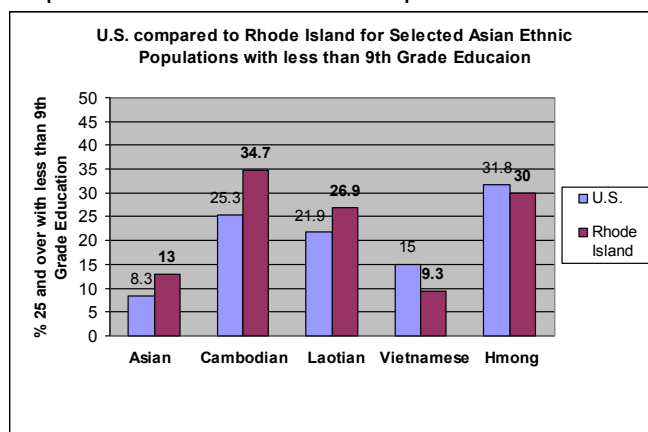
Graph 2a. Education for Selected Hispanic Populations with less than 9th Grade



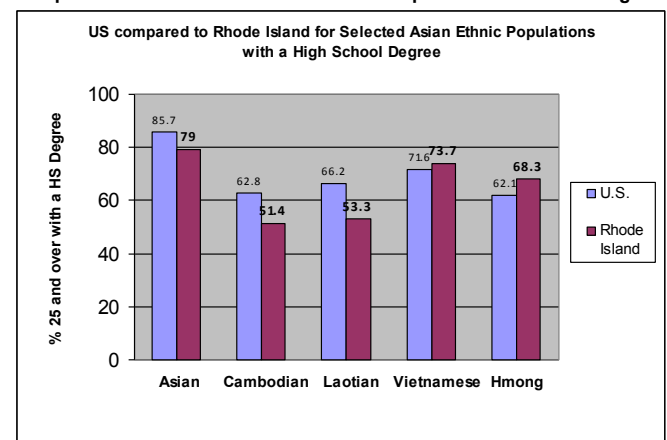
Graph 2b. Education for Selected Hispanic Populations with a HS Degree



Graph 3a. Education for Selected Asian Populations with less than 9th Grade



Graph 3b. Education for Selected Asian Populations with a HS Degree



introduction of sister bills, sponsored by Sen. Juan Pichardo and Rep. Donna Walsh, to create a Commission of Health Advocacy and Equity, it passed and became law RIGL 23-64.1 in June 2011. This statute requires a commission to involve a cross-section of state agencies and community members to focus on the social determinants of health. The commission is responsible for selecting benchmarks and measurements for accountability on improving health disparities.

RIGL 23-64.1 requires the commission to prepare and present to the Governor and the General Assembly a disparities

impact and evaluation report biennially, with significant public input prior to completion. This is a start, intended to keep the issues in front of the legislature and executive branch and to increase public involvement in scrutinizing the health impact of policy and law. In addition, public participation in the process can build more awareness and advocacy for addressing the social determinants of health disparities. It is a place for physicians and health practitioners to educate their patients to become active participants in the process of improving our communities' health.

Policies may be as simple as how we schedule appointments to encourage access to primary care at an individual health center or office. They may be as complex as how we calculate poverty or define assets when determining eligibility for subsidies or how we determine who has completed high school. Zoning policies, siting decisions on locations of parks, density of fast food outlets or liquor stores are examples of community policies that can profoundly influence health of communities. Where store owners place candy and tobacco products, whether restaurants offer or highlight healthy options, whether we clear sidewalks or only parking lots, whether we allow smoking in multi-family housing are business decisions that contribute to healthy or unhealthy lifestyles.

Our attention to social determinants of health in our state is consistent with the work of Burris' and with Lasker's observation, as well as that of the World Health Organization.¹¹⁻¹³ It is also consistent with what is now being termed a Health in All Policies framework developed for the Adelaide Statement of 2010.¹⁹ The statement is focused principally on governmental policies in democratic societies and asks to engage leaders and policy makers at all levels of government emphasizing that government objectives for the wellbeing of the population are best achieved when all sectors include health as a key component of policy development. Health in All Policies is a strategy for influencing the social determinants of health by taking account of the expected health impacts of policies as they are formed and pressing for adjustments that will improve the daily living conditions of populations experiencing health disparities. Structural constraints like segregation require institutionalized processes which essentially force cross-sector problem solving and attention to power imbalances. Only when we cast our policy discussion in broad terms will we recognize the changes required to improve health.

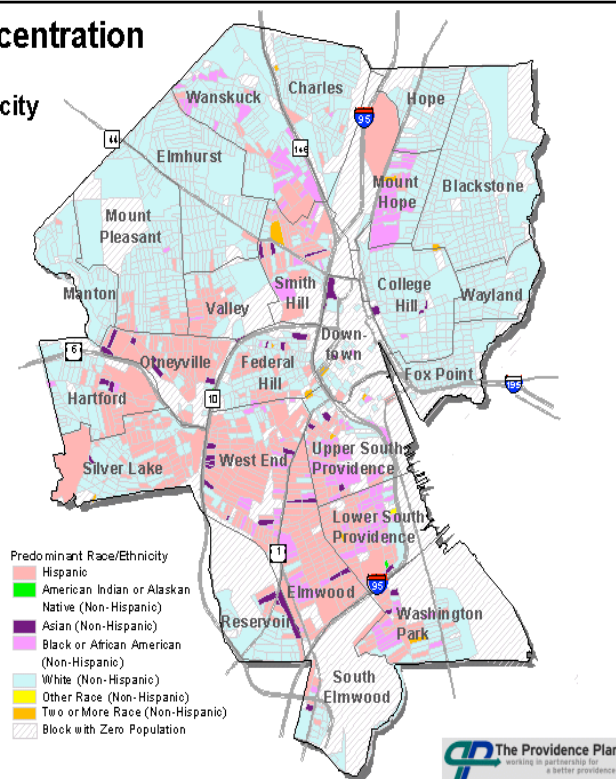
Table 4. Residential Segregation Providence Metropolitan Area					
Segregation Indices		Hispanic	African American	Asian/Pacific	Native American
Unevenness: Dissimilarity Index (D)	National Median	0371	0.501	0.337	0.254
	Providence MSA Median	0.676	0.600	0.437	0.408
Exposure: Interaction Index (*xPY)		0.870	0.680	0.950	0.975
		0.571	0.715	0.863	0.945
Concentration: Relative Concentration Index (RCO)		0.422	0.646	0.522	0.131
		0.854	0.802	0.560	0.280
Centralization: Relative Centralization Index (RCE)		0.148	0.244	0.197	0.0585
		0.488	0.479	0.292	0.216
Clustering: Spatial Proximity Index (SP)		1.038	1.109	1.014	1.003
		1.271	1.133	1.045	1.012

Source: U.S. Census Bureau (2000), Housing and Household Economic Statistics Division; Providence-Fall River-Warwick, RI-MA MSA, most updated available

Figure 1. Map reflects residential racial/ethnic segregation

Racial/Ethnic Concentration

2000 Census Blocks by
Predominant Race/Ethnicity
Providence, RI



Source: Census 2000 Redistricting Data

CONCLUSION

The creation of law RIGL 23-64 coincided with a series of Institute of Medicine reports, *For the Public's Health*.²⁰⁻²² The first, *Role of Measurement in Action and Accountability*,²⁰ noted that the United States spends more on health than other nations – almost \$2.5 trillion in 2009 – and yet scores lower than other wealthy nations on life expectancy, infant mortality, and other indicators of population health. The second, *Revitalizing Law and Policy to Meet New Challenges*,²¹ notes that public policy can be one of the most effective approaches to protecting and improving the health of the population and asks government and private sector stakeholders to consider health in a wide range of policies and to evaluate the health effects and costs of major legislation. The final report, *Investing in a Healthier Future*,²² asks for the reallocation of health dollars and new sources of funds to strengthen the nation's public health capacity. In Rhode Island, the law asks for the use of a social determinants of health framework, to use a cross-sector approach to evaluate health disparities and to report progress on benchmarks for measurement and accountability. It is a start to continue to develop a clearer look at the social determinants of health and develop greater capacity to do prospective Health Impact Assessments with the goal to advance a Health in All Policies approach.

For up to date information about the Rhode Island Health Advocacy and Equity Commission attend their meetings that are open to the public, see the schedule here: <http://sos.ri.gov/documents/publicinfo/omdocs/notices/6064/2012/134533.pdf>

Or contact them for more information on joining the Commission: <http://www.health.ri.gov/partners/commissions/healthadvocacy-andequity/index.php>

Acknowledgements

Many thanks to Senator Juan Pichardo and Representative Donna Walsh for the legislation to create the Commission for Health Advocacy and Equity. Also, many thanks to the coalition – the Transcultural Community Health Initiative, Ocean State Action and many others – who advocated over the years for the legislation.

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Disclosures

There is no potential conflict of interests for either of the authors.

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