In the First Place:

Community Prevention's Promise to Advance Health and Equity

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I. INTRODUCTION

In March 2010, after months of spirited debate, the United States began the process of reforming its health care system when President Barack Obama signed the Affordable Care Act (ACA[1]) into law. Up until now, the United States has not prioritized the health and safety of its residents. By embracing a "sick care" approach whereby individuals are treated *after* the onset of (often preventable) illnesses and injuries, the United States continuously lags behind many developed and developing nations across a spectrum of health indicators.[2,3] However, in addition to expanding care, the ACA includes a groundbreaking approach to community prevention, which presents a paradigm shift away from this focus on sick care and has significance for cities and communities throughout the world.

Quality prevention focuses on communities and systems. By addressing the underlying causes of illness and injury, comprehensive community prevention strategies offer the certainty of eliminating unnecessary illness, injury, and even death. This groundbreaking and logical approach to health builds equity for the most vulnerable members of society while maximizing limited resources. While community prevention is currently practiced in many places throughout the world, the comprehensive scope of the US investment will contribute significantly to the understanding of how to use this approach as a catalyst for health and equity. Assuming the US political process does not impede the implementation of the prevention and wellness strategies, the outcomes of this process will provide valuable lessons in what works and what needs strengthening.

This paper defines community prevention, describing its role as a cornerstone in achieving health equity and social justice, both in the United States and internationally. Three strategic tools and frameworks for quality prevention practice are highlighted: Taking Two Steps to Prevention; the Spectrum of Prevention; and Collaboration Multiplier. Taken together, these tools allow for the systematic application of community prevention: exposing the underlying determinants of health; developing a multifaceted prevention strategy; and developing meaningful interdisciplinary partnerships to get the work done.[1]

II. IN THE FIRST PLACE: The imperative for community prevention

"… No mass disorder afflicting mankind is ever brought under control or eliminated by attempts at treating the affected individual …" [4]

Dr. George Albee, psychologist and noted prevention advocate

Simply put, community prevention is about taking action *in the first place*, before people get sick or injured. Throughout the world, preventable illness and injury lead to unnecessary suffering and premature death, and exert a significant economic burden on national economies. Worldwide, the World Health Organization (WHO) and UNICEF's Child Health Epidemiology Reference Group found that two-thirds of the world's nine million child deaths in 2008 resulted from preventable infectious diseases.[5] The WHO predicts that in 2030, preventable illnesses will continue to account for a significant percentage of deaths worldwide, with heart disease, stroke, chronic obstructive pulmonary disease, and road

* These tools have been promulgated by Prevention Institute to strengthen community and government capacity to foster health. Tools can be found online at http://preventioninstitute.org/tools

traffic crashes among the top five leading causes of death.[6] Preventable deaths are particularly prevalent in the United States, where nearly 50 percent of annual deaths—and the impaired quality of life that frequently precedes them—are preventable in part because they are attributable to external environmental or behavioral factors.[7,8] A recent study of dietary and lifestyle risk factors found that in the United States, smoking, high blood pressure, and being overweight are the leading (and preventable) risk factors for premature death.[9]

It is unquestionable that access to quality, culturally competent medical care is a critical component in supporting health. However, medical care alone is not enough to stem the tide of preventable illness and injury worldwide. According to the noted US public health expert Henrik Blum, medical care and interventions "play key restorative or ameliorating roles. But they are predominantly applied only after disease occurs and therefore are often too late and at a great price."[10] Despite the widely held belief—particularly in the United States—that the state of being healthy is derived primarily from health *care*, Blum notes that in reality, there are four major determinants of health: (1) environment, (2) lifestyle (behavior), (3) heredity, and (4)health care services. Of these four, Blum

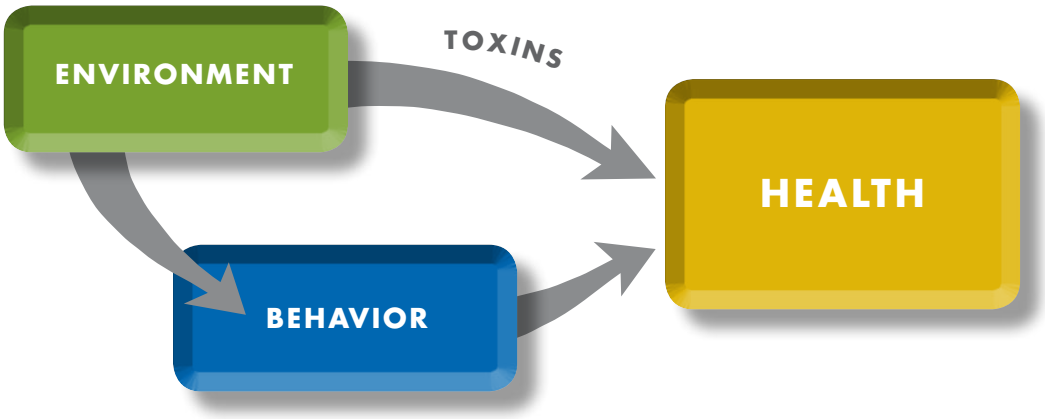

Figure 1. The environment includes the natural environment which impacts health directly through toxins in the air, water and soil. The environment also refers to the larger social, cultural, and physical environment, which influences behavior (negatively or positively) and, as a result, health.†

found that "by far the most potent and omnipresent set of forces is the one labeled 'environmental,' while behavior and lifestyle are the second most powerful force"[11] (p. 43). As the prevention model below shows, there is a strong link between environment and behavior.

The term 'environment' is used broadly and refers to the social, cultural, and physical context in which everyday life takes place. Therefore, the environment includes the natural environment (air, water and soil) as well as the physical *places* where people live, learn, work, worship, and play. While there is a direct link between behavior and health, more often than not, it is the *environment* that shapes behaviors, by making it easier or harder to engage in health promoting behavior. The community environment also has a social and cultural component, extending beyond specific geographic or place-based boundaries to include demographic communities (for example: lesbian, gay, bisexual, and transgender or immigrant communities) that exist both within and across geographic borders. Community prevention, then, must change the community environment in order to change health behavior.

† Prevention model developed by Prevention Institute, www.preventioninstitute.org

Community prevention addresses the factors in the community and political environment that contribute to poor health and increases those that support health. For example, communities worldwide are healthiest when they are safe and not plagued by violence; offer healthy and affordable foods; have safe, reliable, and accessible public transportation options; have opportunities for play and recreation; allow access to meaningful education and employment opportunities; are free of racial, sexual or gender

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"[A healthy community] means neighborhoods that are green, recreation friendly,with affordable, sustainable housing, good jobs and healthy, fresh, affordable food produced in fair labor environments. Where children thrive feeling safe, happy and cared for. Families are supported and connected to extended networks. Education and services meet community needs. Neighbors are engaged with each other in fair, collaborative governance of their communities. There are diverse venues for communications and cultural expression and access to technology that helps augment our human and social capital."[12]

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discrimination; and have a natural environment free of pollutants and toxins. Makani Themba-Nixon, of the US-based Praxis Project, explains:

Due to the influence of the community environment on health, community prevention cannot simply be relegated to a health message in a pamphlet or by telling people "do this, don't do that." For example, when states in the United States passed legislation to require infant car seat usage, the impact of the policy far exceeded that of education in changing norms and thus behavior: usage for infants went from 25% maximum to nearly universal, and child death and injury from car crashes decreased significantly.[13] As the Institute of Medicine, a US organization that serves as an advisor to the government to improve health through the independent study of relevant health issues, concluded in its 2000 report *Promoting Health*, "It is *unreasonable* to expect that people will change their behavior easily when so many forces in the social, cultural, and physical environment *conspire*‡ against such change."[14] Effective community prevention targets not just individual behaviors (e.g., eating too much junk food) but also the environment in which they occur (e.g., an absence of grocery stores selling healthy food and the pervasive marketing of unhealthy foods) since it is well known that the environment influences the behavior. As Dorfman, Wallack, and Woodruff explain, "Personal choices are always made in the context of a larger environment. Prevention can address both ends of the spectrum. In fact, many health and social problems are related to conditions outside the immediate individual's control. A focus limited to personal behavior change ultimately fails us as a society because it narrows the possible solutions inappropriately."[15]

Strategies to prevent illness and injury before they occur have demonstrated a strong return on

‡ Emphasis Added

investment. Recent US studies forecast a savings of over $5 for each $1 invested in prevention.[16] The savings are realized not only through averted medical costs but also through increased productivity and reduced strain on social services. While the table below reflects savings in the US context, the implications—preventing illness and injury saves money— are relevant for communities across the globe.

	Every $1 invested in:	Produces savings of:
Government	Water fluoridation	$37.24 in communities with more than 20,000 people[17]
	High-quality preschool programs	$16.41 from averted crime, remedial services, and child welfare services[18]
	Breastfeeding support by employers	$3 in reduced absenteeism and health care costs for mothers and babies, and improved productivity[19]
	Women, Infants, and Children services	$2.91 in Medicaid for newborn medical care[20]
Community	Child safety seats	$41.52 in direct medical costs and other costs to society[21]
	Bicycle helmets	$30 in direct medical costs and other costs to society[22]
	California Tobacco Control Program	$50 in total personal health care spending[23]
	Walking and Biking Trails	$2.60 in direct medical costs of physical inactivity[24]
	Physical activity programs for older adults	$4.50 on hip fractures[25]
	Worksite wellness programs	$15.60 in reduced absenteeism[26]
	Family and school based addiction prevention programs	$10 in employer and community benefit[27]
Clinical	The 7-Vaccine routine childhood immunization schedule	$16.50 in direct medical costs and other costs to society[28]
	The Chicken Pox vaccine	$4.37 in direct medical costs and other costs to society[29]
	Screening and brief counseling interventions for alcohol misuse among pregnant women	$4.30 in healthcare costs[30]
	Hospital needlestick prevention program	$6.20 in medical and associated costs[31]
	Vaccines for older adults	$2.44 in hospitalization costs due to influenza[32]
	Hospital program (handwashing promotion, education of staff) to prevent the spread of infection	$6.00 in hospital medical costs[33]

III. HEALTH EQUITY AND THE COMMUNITY ENVIRONMENT

In cities throughout the world, adverse health outcomes are not experienced evenly across communities; in many low-income communities and communities of color, whole populations are consigned to shortened, sicker lives.[34,35] Inequities in the distribution of a core set of health-protective resources perpetuate patterns of poor health. Racially and economically segregated communities are more likely to experience community environments that do not support health, including limited economic opportunities; a lack of healthy options for food and physical activity; increased presence of environmental hazards; substandard housing with greater prevalence of safety hazards and lead; lower performing schools; higher rates of crime and incarceration; and higher costs for common goods and services (the so-called "poverty tax").[36]

Health inequity is related to a legacy of overt discriminatory actions on the part of government and the larger society as well as to present day practices and policies of public and private institutions. As a result of these discriminatory practices, the community environment itself offers far fewer resources (e.g. availability of healthy food) and infrastructure (e.g. quality housing) that promote health, instead perpetuating a system of diminished opportunity. Poverty, racism, and a lack of educational and economic opportunities are among the fundamental determinants of poor health, lack of safety, and health inequities, contributing to chronic stress and building upon one another to create a weathering effect, whereby health greatly reflects cumulative experience rather than chronological age.[37] Further, continued exposure to racism and discrimination may in and of itself exert a great toll on both physical and mental health.[38]

California's Alameda County is a densely populated (1,957 people per square mile (756/km²)), diverse urban area just across the Bay from San Francisco, that serves here as an example of the impact that neighborhood has on health: an African American child born today in a poorer part of the county will live an average of 15 years fewer than a white child born in a nearby, wealthier neighborhood. Further, for every $12,500 in income difference between families, people in the lower-income family can expect to die a year sooner.[39]

Inequities in health impact even those that experience relatively low rates of illness and injury, and so it is imperative that everyone prioritize health equity. As international cities grow and their populations become increasingly diverse, achieving healthy, productive nations will depend even more on keeping all residents healthy. Wilkinson and Pickett, in 2006, reviewed 168 analyses of the relationship between income inequality and population health and in a vast majority (78%) of the studies, all or some of the health variables measured were significantly linked to inequality.[40] The studies were done in a large number of countries as well as regions, states, and cities worldwide. Obesity,[41] teenage birth rates (both among wealthier countries internationally and all 50 United States),[42,43,44] and mental illness[45] have also been linked to income inequality worldwide. An equitable system can drastically lower the cost of health care for all,

increase productivity, increase safety, and reduce the spread of infectious diseases, thus improving everyone's well-being.

By addressing the underlying factors that contribute to positive or negative health outcomes and strengthening the environments where people live, work, play, socialize, and learn, community prevention directly addresses heath equity. Policy and institutional practices are key levers for change and for achieving equitable conditions. Exclusionary institutional practices, along with public and private policy, directly resulted in the inequitable conditions and outcomes confronting communities in the first place. Consequently, the years of neglect and disinvestment experienced in low-income communities and communities of color must be undone by focusing on advancing inclusive, equity-based policies that transform communities and improve health outcomes for all.

IV. FRAMEWORKS FOR COMMUNITY PREVENTION

The strategies that prevent illness and injury in the first place, as well as the processes by which they are developed and implemented, will vary based on community health priorities, resources, and other elements specific to the community. However, there is a set of frameworks that is useful in guiding community prevention initiatives: Two Steps to Prevention, the Spectrum of Prevention, and Collaboration Multiplier.

Two Steps to Prevention guides prevention thinking by helping to recognize that underlying behaviors and conditions contribute to disease and that the environment is a key determinant of these behaviors and conditions. Perhaps more importantly, it is a tool for identifying the specific health promoting or health deterring elements of the community environment. Once those elements of the environment are identified, they must be changed to promote health. Creating sustainable change in the community environment also requires a comprehensive strategy: one that addresses the policies and infrastructure that shape the environment, the community groups and organizations that lead health-supporting initiatives, and the community members whose priorities and shared knowledge should guide the entire process. The Spectrum of Prevention guides users in thinking through the elements of a comprehensive community prevention strategy.

In order to achieve sustainable community prevention efforts, people and organizations must work together. While treatment of medical problems is thought of as a role strictly for medical professionals, the conditions that determine *health*—including the walkability of neighborhoods, what's sold and promoted, the arts and culture, jobs and local ownership, education and social justice—are the purview of a diversity of organizations and sectors. For this reason, partnerships and collaboration that represent a multitude of sectors, reaching far beyond health, are needed. These types of interdisciplinary partnerships may at times be challenging to coalesce for those used to dealing within a health frame only. Collaboration Multiplier[§] is designed to make the challenges explicit and the steps to effective partnership clear. Thus, Collaboration Multiplier offers the hope of maximizing prevention outcomes, avoiding duplication of efforts, and forming long-term and sustainable partnerships capable of addressing a variety of health and social problems.

Taking Two Steps to Prevention

When an individual experiences a heart attack, the immediate response is medical: seeking the quickest transportation to a medical facility, the best medical care, and the treatments that can restore health. This reaction is logical given the context; in an emergency, we must respond with medical attention. As we develop strategies to support health and health equity in the community, however, the singular focus on medical care as the solution is insufficient. Preventing illness and injury before they occur requires an expanded scope, tracing the

[§] Available free of charge online at http://preventioninstitute.org/tools/partnership-tools.html

pathway from illness and injury to the community conditions, normative behaviors and root factors that impede health and health equity in the first place. It is helpful, then, to ask the following questions:

- *Why* are people getting sick and injured *in the first place*?
- What impedes their ability to recuperate?
- Are their communities conducive to good health?
- Are the air, water and soil clean?
- Do the products sold and promoted in their community enhance health (e.g. healthy food) or impede it (e.g. tobacco, alcohol, etc.)?
- Are transportation options safe and affordable?
- Do strong schools and work opportunities exist in the community?
- What persistent stressors exist in the environment, and what is the potential long-term impact of these stressors to health?

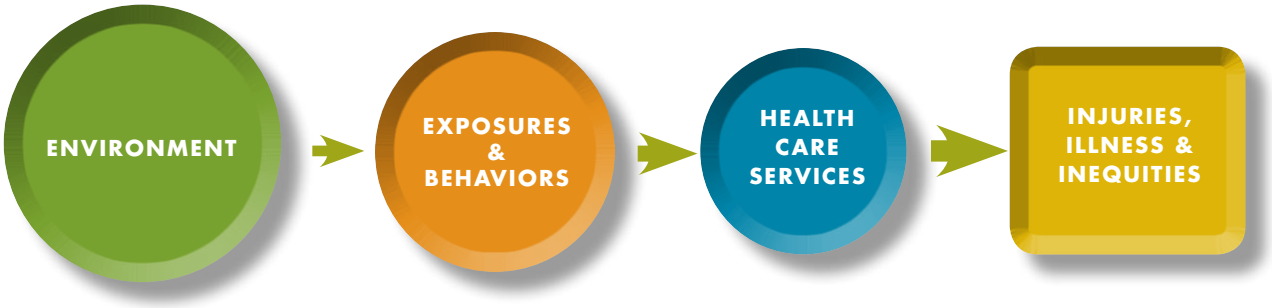

Figure 2. Taking Two Steps to Prevention is a framework for analyzing the underlying causes of illness and injury and health inequities and for identifying the key opportunities for intervention and prevention. The framework shows how behaviors and exposures result in illnesses and injuries. Further, it emphasizes the critical role of the environment on health, mental health, and safety.

These questions help us to take two steps from the health concern itself and arrive at the community-level strategies that can *prevent* adverse health outcomes. The first step is from a specific disease or injury to the behaviors (e.g., tobacco use or poor diet) and the exposures (e.g., stressors or poor air quality) that increase the likelihood of that illness or injury. By decreasing the levels of unhealthy behaviors and exposures, health improves and the likelihood and severity of illness and injury is reduced. In fact, most behaviors and exposures are linked to multiple medical diagnoses, meaning that addressing even just one can improve health broadly. For example, unhealthy eating contributes to hypertension, diabetes, and heart disease. Taking the next step is critical: a second step reveals the specific elements in the community environment that influence and shape these behaviors and exposures. A review of the literature has revealed the thirteen community factors[46] generally linked to community behaviors and conditions, including those related to equitable opportunity (e.g. jobs), place (e.g. housing), and people (e.g. social networks and trust). An emphasis on addressing these factors in the community environment is key to quality prevention efforts. Taking Two Steps, first from the health issues to the behaviors and exposures, and second to the community environment, leads to comprehensive, sustainable solutions rather than those focused on individuals.

Regulatory responses to the tobacco industry illustrate this model in action. Tobacco-related cancer deaths in the United States climbed to epidemic levels during the 20th century, and tobacco use remains one of the leading contributors to preventable illness and premature death in the US and worldwide. When the links between cigarette smoking and adverse health outcomes became obvious in the mid-20th century, health advocates recognized that, while treatment of tobacco-related illnesses would remain important, there were also ways to prevent the

illnesses. Health advocates took the first step, moving from the health issue (e.g. lung cancer) to approaches aimed at reducing the associated behavior (smoking). The public health community in the US began with informational campaigns designed to encourage smokers to quit and to prevent non-smokers from starting. While the information campaigns did successfully increase awareness of the health hazards associated with smoking, this awareness did not translate into a meaningful reduction in smoking prevalence. Striving to support smokers who wanted to quit, the strategy shifted to incorporate cessation programs in addition to information campaigns. Together, these approaches sought to improve health by encouraging individuals to change their behavior. Like most health behaviors, however, smoking is strongly influenced by the larger environmental context. In an environment saturated with messages crafted by the tobacco industry's multi-billion dollar advertising campaigns and in which smoking was an established social norm, these individual-centered approaches had minimal impact on national cigarette consumption.[47]

In the 1970s, the response shifted; health advocates took the second step, from behaviors to the environmental and social context that shapes those behaviors. The focus moved to strategies that would change the community environment that encouraged people to start smoking in the first place, and that made it difficult to quit. Policy became the tipping factor to change environments and norms. The changes were incremental at first, but they signaled the beginning of a sea change in the social norms associated with smoking in the US. In 1972, domestic airlines in the US established non-smoking sections for domestic flights, and soon states and local governments passed legislation requiring the creation of "no smoking areas" in public indoor spaces. The state of Minnesota, in 1975, was the first state to legislate that smoking would be prohibited everywhere unless it was explicitly permitted, making non-smoking the new norm.[48] Similar pieces of legislation followed, modifying the environment in communities across the world and contributing to a decline in non-smokers' exposure to secondhand smoke from 84% (1988-94 US) to 46% (1999-2004).[49] The tobacco industry clearly recognized the power of these community environment approaches to reduce smoking behaviors, as evident in a 1992 Philip Morris memo: "If smoking were banned in all workplaces, the industry's average consumption would decline… and the quitting rate would increase…"[50] In fact, by taking the second step to prevention, US smoking rates were halved between 1965 and 2008, and adverse tobacco-related outcomes – including incidences of lung cancer – have declined as well.[51] Of course, the tobacco companies' first reaction was to try and expand markets in other parts of the world, an effort they no doubt would have undertaken in any case. As smoking bans—from airlines to restaurants to public places—move from the US to worldwide, we can anticipate the same gains in health status.

THE SPECTRUM OF PREVENTION

Recognizing that preventive solutions require attention to the community environment, it becomes vital to focus on the identified environmental conditions to determine and implement comprehensive solutions. The Spectrum of Prevention provides a systematic framework for developing effective and sustainable community prevention efforts. The six levels of the Spectrum are complementary and when used together each level reinforces the others, leading to greater effectiveness. According to Ottoson and Green,[52] "One of the lessons of successful efforts in community-based health information has been that activities must be coordinated and mutually supportive across levels and channels of influence, from individual to family to institutions to whole communities."

The Spectrum is a powerful tool for shaping

Figure 3. The Spectrum of Prevention

norms change efforts. Norms are powerful shapers of behavior and are key determinants of whether our behaviors will be healthy or not. They are the way in which the societal and community environment 'tells' us what is considered okay and not okay. More than habits, and often based in culture and tradition, norms are regularities in behavior to which people generally conform.[53] Taking action along the entire Spectrum of Prevention can result in positive norms change. Typically, the tipping factor for normative change requires efforts at the broadest levels of the spectrum, changing organizational practices and policy/legislation, because such actions change the community environment. Behavior change generally does not occur from information sharing alone. However, the other elements of the spectrum are important for contributing to and building on this momentum for change.) As Schlegel[54] points out, policy change can trigger norms change by altering what is considered acceptable behavior, encouraging people to think actively about their own behavior, and providing relevant information and a supportive environment to promote change. The emergence of new social norms occurs when enough individuals have made the choice to change their current behavior.

Breastfeeding, a global public health priority, illustrates the power of organizational practices and policy in influencing and shaping norms. Breastmilk boosts the newborn immune system and is considered the best form of infant nutrition;[55] the World Health Organization calls breastfeeding "…the normal way of providing young infants

with the nutrients they need for healthy growth and development."[56] Today only 13.6% of women in the US adhere to the recommended guidelines of exclusive breastfeeding for six months after birth.[57] Globally, the rates are higher, with 37% of infants under six months breastfed exclusively.[58]

The dramatic decline in breastfeeding over much of the 20th century was spurred by several cultural changes, including poor lactation accommodations for working mothers; decline in the social support for and acceptability of breastfeeding (especially in public); changes in hospital and medical practices; and the development and pervasive marketing of baby formulas as a primary source of infant nutrition—are just some of the contributors to this growing public health problem. In the recent past, breastfeeding rates in the US have started to rise once more as a result of positive changes in the community environment along each level of the spectrum. Just as there is no one cause, there is no single solution that will increase rates of breastfeeding worldwide. Instead, coordinated activities must happen along each level of the Spectrum of Prevention to build momentum and support for breastfeeding. Examples of successful strategies at each level of the Spectrum are included below.

LEVEL 1: Strengthening Individual Knowledge and Skills.

The first level of the spectrum emphasizes enhancing the skills that are essential to healthy behaviors. New and expectant mothers, for example, must understand the importance of breastfeeding and know how to address breastfeeding challenges in order to initiate and maintain breastfeeding. Often an ob-gyn, midwife, nurse or pediatrician can provide early influence on the decision to breastfeed. Sri Lanka, for example, utilizes public health midwives to directly provide breastfeeding information and motivation. With the support of Sri Lanka's Ministry of Health, public health midwives work on the front-lines, systematically visiting homes and providing one-on-one prenatal and antenatal counseling[59]. In 2008, 76% of infants under 6 months were exclusively breastfed in Sri Lanka – one of the highest rates in the world[60].

LEVEL 2: Promoting Community Education.

The second level moves to educating larger communities. Too often, health education initiatives focus on brochures or health fairs. While one-time exposures such as community forums and events can at times be valuable, they generally don't have as big of an impact as face-to-face information sharing from community health workers or even neighbors. Similarly, far better than paid advertising—which only works if it carries a very strong message—is the free publicity that comes when there is controversy, such as new policy or a major advocacy campaign.

As an example of how the levels of the Spectrum reinforce each other, policy change initiatives have a better chance of passing when public awareness is garnered through community education efforts. One of the most impactful and cost effective ways of reaching entire communities is via media coverage. Baby Milk Action, the UK branch of the International Baby Food Action Network, leads an ongoing campaign that publicizes deceitful formula marketing tactics, and promotes the benefits of breastfeeding. Baby Milk Action has taken aim at Nestlé, whom they call one of the biggest violators of the International Code of Marketing of Breastmilk Substitutes. The goal of Baby Milk Action is for Nestlé to acknowledge in writing that it accepts the International Code and will change its policies and practices to make them acceptable under the code. The boycott launched against Nestlé by BabyMilk Action and the media attention it continues to engender has created large-scale community awareness that the decline in breastfeeding is not simply a matter of unfettered individual choice.

LEVEL 3: Educating Providers.

Reaching and educating providers is necessary because they often serve as the conduit to communities and individuals and they help shape standards and norms. The term "providers" typically invokes groups like medical professionals (doctors, nurses, midwives), and sometimes teachers. However, the notion of who is a provider should be approached broadly, extending beyond the "usual suspects" to anyone who is in a position to share information or influence the opinions of others —for example, faith

leaders; postal workers and other public servants; employers; business, union, and community leaders. Health professionals are important providers to reach in the case of breastfeeding. "Breastfeeding counseling: a training course" is a 40-hour World Health Organization course that provides health workers with the information and skills they need to support and educate mothers about breastfeeding. It has been used by thousands worldwide, and Sri Lanka, in particular, has integrated this course into its training of health care providers. In Brazil, this course proved successful in effectively increasing health workers' knowledge about breastfeeding issues and practices, as well as their counseling skills[61].

LEVEL 4: Fostering Coalitions and Networks. The fourth level of the Spectrum emphasizes that one can accomplish more and have a greater impact working together than working alone. Fostering collaborative approaches brings together the participants necessary to ensure an initiative's success and increase the "critical mass" behind an effort. Coalitions and expanded partnerships are vital in successful public health movements including breastfeeding promotion. Collaboration is not an outcome per se, like the other levels of the Spectrum, but rather a tool used to achieve an objective. Often the best way to ensure a comprehensive strategy is to build a diverse coalition. Collaborations may take place at several levels: at the community level, including grassroots partners working together such as in community organizing; at the organizational level, including nonprofits working together to coordinate the efforts of business, faith, and other interest groups; and at the governmental level, with different sectors of government linking with one another. The International Baby Food Action Network (IBFAN) has accomplished many of the initiatives described in this Spectrum example, and it derives much of its strength from the coalition partners. IBFAN is a global initiative, with participating groups in 131 countries. While the efforts of each individual group are distinct, they are not isolated. The progress made in one region of the world succeeds in supporting and lending credence to the work done in another. Interdisciplinary partnerships, described in a later section, are particularly useful for influencing community wellness and effecting change.

LEVEL 5: Changing Organizational Practices. Reshaping the general practices of organizations and institutions can affect both health and norms. Such change reaches the members, clients, and employees of the organization as well as the surrounding community and serves as a model for all. Changing organizational practices is more easily achievable in many cases than policy change and can become the testing ground for policy. Government and health institutions are key places to make change because of their role as standard setters. Other critical arenas include workplaces, media, business, sports, faith organizations, and schools. For example, breastfeeding can be difficult for working mothers unless their employers adopt policies that facilitate breastfeeding. Such organizational policies include allowing enough maternity leave to solidly establish breastfeeding as well as designing environments that make it easier for mothers to pump and store breast milk while at work or creating baby-friendly hospitals. Two key areas for organizational practice change that support breastfeeding are the Baby-Friendly Hospital Initiative and workplace policies around maternity leave and lactation support. As part of the Baby-Friendly Hospital Initiative, participating hospitals provide an optimal environment for the mother to learn the skills of breastfeeding, including allowing mothers to keep their newborns in the same room rather than in the hospital nursery, and encourage initiating breastfeeding within a half hour after birth. These hospitals stop the standard practice of sending mothers home with discharge packs that include artificial baby formula. Other organizational practice changes target the media to change their portrayal of breastfeeding to an issue of infant feeding, rather than focusing on sexualizing female breasts.

LEVEL 6: Influencing Policy and Legislation.
The sixth level of the spectrum has the potential for achieving the broadest impact across a community. Policy is the set of rules that guide the activities of government. By mandating what is expected and required, sound policies can lead to widespread behavior change on a communitywide scale that may ultimately become the social norm. Over the course of the past decades, major health improvements have occurred as a result of policy change, including a reduction in diseases associated with cigarette smoking, a decrease in workplace and roadway crashes due to dramatically greater use of safety equipment, and reductions in lead poisoning. Returning to breastfeeding, policies that support breastfeeding mothers include laws that allow maternity leave and requiring workplaces to make accommodations for employees who breastfeed. According to a recent analysis by the International Labour Organization, "Globally, 51 per cent of countries provide a maternity leave period of at least 14 weeks… [and] 20 per cent of countries meet or exceed the 18 weeks of leave."[62] Although many barriers exist, policy change is an essential piece to achieving social change and equity.

Collaboration Multiplier

As demonstrated in the *Spectrum of Prevention*, developing a strong community prevention strategy requires the involvement of diverse stakeholders, disciplines and sectors at all levels of the decision-making process. Higher rates of breastfeeding, for example, are not achievable without the deliberate participation of numerous sectors, including healthcare, business, media, public health, government, non-governmental *and* community based organizations. Collaborating across sectors generates broad-based support for prevention efforts. Diverse stakeholders working together can share information and resources, consider an issue from different angles, and combine forces to resolve it.

In order for cross-sectoral collaborations to be successful, there must be a working knowledge of how other agencies, sectors or disciplines think, function, and define success. They also must understand how their actions impact health, an approach known as Health in All Policies. Collaboration Multiplier was developed specifically to foster meaningful and impactful cross-sectoral collaborations; it is both a tool and a process that clarifies and promotes the benefits of cross-sectoral collaboration, suggests what needs to be better understood or studied, and identifies key players that may be missing. Changing community environments also requires the participation of stakeholders who might not recognize that their field impacts health. Transportation, for example, impacts health by promoting or impeding walking and bicycling, by reducing or exacerbating traffic-related injuries, and through the potential to connect community residents with important, health supporting services. Reducing the rates of illnesses related to water quality or housing conditions will always require the active participation of health advocates *and* those involved in water distribution or housing authorities.

When using Collaboration Multiplier, each sector in the collaborative shares key information according to a common set of categories. Specific categories vary based on the particular collaboration; however, typical examples include:

Definition of problem: What language does each sector use to define the issue?
Key Issues: What are each sector's priorities relating to the issue?
Data: What information does each sector collect, and how does it collect it?
Funding: What funding sources and other resources does each sector bring?
Training: What expertise can each sector share with other participants; who does each sector typically train?
Partners: With what other types of groups is each sector connected?
Solutions/outcomes: What specific objectives has each sector set in relation to the issue?

After each sector has provided its response to each category, a Collaboration Multiplier Matrix is developed that captures everyone's thinking. In the case of traffic safety, for example, collaborative members

could include public health, law enforcement and transportation engineers. These types of groups, and others, came together to form SafeTREC, the Safe Transportation Research and Education Center at the University of California, Berkeley.** Each of these sectors views the issue of traffic safety in slightly different ways: public health defines it as a community *health* problem; law enforcement as a community *safety* and enforcement issue; transportation engineers as one of transportation *infrastructure* needing to promote safe travel. Once it is clear how other sectors define a problem differently, it becomes much easier to arrive at a problem definition that can be embraced by the *entire* collaborative. The same is true across each of the categories for Collaboration Multiplier: capturing the nuances facilitates the development of shared solutions. Thus Collaboration Multiplier provides a structure for deepening a group's understanding of its own anatomy. The tool illustrates the range of strategies, solutions, and outcomes that each participating group uses and can help diverse groups *multiply* their impact.

	Problem Definition	Data	Approaches/Outcomes	Training
Public Health	Traffic safety is a community health problem:	• Morbidity, mortality rates • Hosp. admissions • ER data in FARS	• Education campaigns • Community participation • Env'l & Policy Change	• ID-ing at-risk communities, individuals • Effects of transportation on health
Law Enforcement	Traffic violations are a community safety issue	• Moving violations • Crash reports	• Check points • Patrolling & citations • Education campaigns	• Promoting use of occupant restraint systems • Enforce ment techniques • Crash investigations
Transp. Engineering	Transportation infrastructure should promote safe & efficient travel	• Police & crash reports • Speed volume & congestion studies • FARS	• Improved vehicle safety devices • Safer roads & sidewalks • Traffic calming	• ID-ing dangerous roads • Safer road & sidewalk design
Optometry	Optimal visibility of signals & hazards improves traffic safety	• Studies of acuity, driver performance • Reaction time to various signals & signs	• Better vehicle display, signal & road designs • Better driver assessment for licensing purposes	• ID-ing how people visualize traffic signs & signals
Planning	Traffic safety can be affected by transportation system design & travel behavior	• Travel behavior surveys • Census data • Zoning maps • Traffic congestion speed counts	• "Safe havens" for vulnerable users • Create transp. sys. to minimize conflict between users	• Transp. demand & behavior • Effect of infrastructure on trip length, type
MATH	Average:	Sum:	Sum/Average:	Product:
Implications				

The implications for the Collaboration Multiplier matrix above are that traffic safety is a major community concern which can be ameliorated by partners working together (Problem Definition); there are multiple data sources which give a fuller picture of the impacts of traffic safety (Data); different sectors can work together on new and expanded strategies, such as traffic calming (Approaches/Outcomes); and there are several training opportunities which can enhance the capacity of both individual collaborators and the collaborative as a whole (Training).

** www.safetrec.berkeley.edu

V. CONCLUSION

Communities across the globe are developing quality prevention approaches based on a new way of thinking, one that examines the underlying causes of illness and injury. As health advocates and local leaders seek solutions to pervasive health and social problems, they are starting to define health more broadly. The frameworks presented in this paper—Taking Two Steps to Prevention, the Spectrum of Prevention and Collaboration Multiplier—are valuable tools in addressing the underlying determinants of health and the ways they influence the environments where people live, work, play and learn. Martin Luther King famously said, "Of all the forms of inequality, injustice in health care is the most shocking and inhumane." [63] It is time that nationally, and internationally, we start to approach health and equity as the human rights issues that they are. Embracing a community prevention approach allows advocates, community leaders and health practitioners to keep people healthy *in the first place*.

REFERENCES

1. (2010, January 15) Patient Protection and Affordable Care Act, One Hundred Eleventh Congress of the United States of America.
2. (2000) The World health report 2000: health systems : improving performance, World Health Organization, Geneva, Switzerland.
3. (2007) OECD Health Data
4. Albee, G. W. (1983). *Psychopathology, prevention, and the just society*. Journal of Primary Prevention, 4, 5–40.
5. (2010, May 12) *Global, regional, and national causes of child mortality in 2008: a systematic analysis*, The Lancet, published online, 375(9730), 1969 - 1987
6. WHO Library Cataloguing-in-Publication Data, World health statistics 2008. Retrieved from http://www.who.int/whosis/whostat/EN_WHS08_Full.pdfNovember 3, 2010.
7. McGinnis, J. M., & Foege, W. H. (1993). *Actual causes of death in the United States*. Journal of the American Medical Association, 270, 2207–2212.
8. Mokdad, A. H., Marks, J. S., Stroup, D. F., & Gerberding, J. L. (2004, March 10). *Actual causes of death in the United States*, Journal of the American Medical Association, 291, 1238–1245.
9. Goodarz Danaei, Eric L. Ding, Dariush Mozaffarian, Ben Taylor, Jurgen Rehm, Christopher J.L. Murray, Majid Ezzati (2009, April 28) *The Preventable Causes of Death in the United States: Comparative Risk Assessment of Dietary, Lifestyle, and Metabolic Risk Factors*, PLoS Medicine, 6(4)
10. Blum, H. L. (1981). *Social perspective on risk reduction*, Family and Community Health, 3, 41–50.
11. Blum, H. L. (1981). *Social perspective on risk reduction*, Family and Community Health, 3, 41–50.
12. Themba-Nixon, Makani. Communities Creating Healthy Environments: Improving Access to Healthy Food and Safe Places to Play for Communities of Color. Retrieved from http://www.cheonline.org/node/188 on October 27, 2010.
13. (2004, June). Sixth report to Congress, fourth report to the president: The national initiative for increasing safety belt use, National Highway Traffic Safety Administration, Washington, DC
14. Smedley, B.D & Eds, L.S. Syme (2001) *Promoting health: Intervention strategies from social and behavioral research*, Institute of Medicine, National Academies Press, Washington, DC
15. Dorfman L, Wallack L, Woodruff K. (2005). *More than a message: Framing public health advocacy to change corporate practices*, Health Ed & Behav, *32*(3), 320-336.
16. Prevention for a Healthier America. Trust for America's Health, Prevention Institute, The Urban Institute, New York Academy of Medicine. (2008). Available on http://preventioninstitute.org/documents/PreventionforaHealthierAmerica_7_08_001.pdf
17. Griffin, S. O., Jones, K., Tomar, S. (2001) *An Economic Evaluation of Community Water Fluoridation*, Journal of Public Health Dentistry, 61(2), 78-86.
18. (2005) *The High/Scope Perry Preschool Study through Age 40*, High/Scope Educational Research Foundation, Ypsilanti, MI, Schweinhart, L. J.
19. (2002) Workplace Breastfeeding Support, United States Breastfeeding Committee, Raleigh, NC.
20. Buescher, P.A., Larson, L.C., Nelson, M.D., Lenihan, A,J (1993). *Prenatal WIC participation can reduce low birth weight and newborn medical costs: a cost-benefit analysis of WIC participation in North Carolina*, Journal of American Dietetic Association, 93, 163-166.
21. (2005). *Child Safety Seats: How large are the benefits and who should pay?* Children's Safety Network, Newton, MA.
22. (2008, January). National Highway Traffic Safety Administration. Traffic Safety Fact Laws: Motorcycle helmet use laws. Washington, DC
23. Lightwood JM, Dinno A, Glantz SA (2008). *Effect of the California Tobacco Control Program on Personal Health Care Expenditures,* Public Library of Science Journal, 5(8)
24. Wang, C,., Macera CA, Scudder-Soucie B, Schmid, T, Pratt, M, Buchner D, Heath G. (2004). *Cost Analysis of the Built Environment: The case of bike and pedestrian trails in Lincoln, Neb*, American Journal of Public Health, 94(4), 549-553.
25. *Healthy Aging and States: Making Wellness the Rule, Not the Exception,* National Governors Association.
26. Aldana SG, Merrill RM, Price K, Hardy A, Hager R (2005). *Financial Impact of a Comprehensive Multisite Workplace Health Promotion Program*, Preventive Medicine, 40(2), 131-7.
27. (2009, January 20). *ISU report to United Nations conference says drug prevention programs help the economy*, Iowa State University News Service, [Press release] Ames, Iowa
28. Zhou F, Jeanne Santoli, Mark L. Messonnier, Hussain R. Yusuf, Abigail Shefer, Susan Y. Chu, Lance Rodewald, & Rafael Harpaz (2005) *Economic Evaluation of the 7-Vaccine Routine Childhood Immunization Schedule in the United States, 2001*, Archives of Pediatric and Adolescent Medicine, *159*(12).
29. Zhou, F, Ortega-Sanchez IR, Guris D, Shefer A, Lieu T, & Seward, JF (2008) *An economic analysis of the universal varicella vaccination program in the United States*, Journal of Infectious Disease, *1*(197), S156-164.
30. Fleming MF, Mundt MP, French MT, Manwell LB, Stauffacher EA, & Barry KL (2002). Brief physician advice for problem alcohol drinkers: long-term efficacy and benefit-cost analysis. A randomized controlled trial in community-based primary care settings. Alcohol: Clinical and Experimental Research, *26*, 36-43.
31. Hatcher, I. B.(2002) *Reducing sharps injuries among health care workers: a sharps container quality improvement project*, Joint Commission Journal on Quality Improvement, *28*(7), 410-414.
32. Maciosek MV, Solberg LI, Coffield AB, Adwards NM, & Goodman MJ (2006) *Influenza vaccination health impact and cost effectiveness among adults aged 50 to 64 and 65 and older*, American Journal of Preventive Medicine, *31*(1), 72-29.
33. Macartney KK, Gorelick, MH, Manning ML (2000) *Nosocomial Respiratory Syncytial Virus Infections: The Cost-Effectiveness and Cost-Benefit of Infection Control*, Pediatrics, *106*(3), 520-526.
34. Marmot, M. (2005) Social determinants of health inequalities Lancet; 365: 1099–104.

35. Cohen L, Iton A, Davis R, Rodriguez S. *A Time of Opportunity: Local Solutions to Reduce Inequities in Health and Safety.* Presented to the Institute of Medicine Roundtable on Health Disparities, Minneapolis, MN May 2009.
36. Smedley B, Jeffries M, Adelman L, Cheng J. (2008) *Race, Racial Inequity and Health Inequities: Separating Myth from Fact*, Available at: www.unnaturalcauses.org/assets/uploads/file/Race_Racial_Inequality_ Health.pdf
37. Geronimus AT, (2001) *Understanding and eliminating racial inequalities in women's health in the United States: the role of the weathering conceptual framework*, Journal of the American Medical Women's Association, 56(4), 133-6 & 149-50.
38. (1999) *Mental Health: Culture, Race, And Ethnicity: A Supplement to Mental Health: A report of the Surgeon General*, U.S. Department of Health and Human Services, Rockville, MD.
39. Life and Death From Unnatural Causes: Health & Social Inequity in Alameda County. Alameda County Public Health Department September 2008.
40. Wilkinson, R.G., & Pickett, K.E. (2006). *Income inequality and population health: A review and explanation of the evidence*, Social Science and Medicine, 62(7), 1768-1784.
41. Pickett, K.E., Kelly, S., Brunner, E., Lobstein, T., & Wilkinson, R.G. (2005) *Wider income gaps, wider waistbands? An ecological study of obesity and income inequality*, Journal of Epidemiology andCommunity Health, 59(8), 670-674.
42. Gold, R., Kawachi, I., Kennedy, B.P., Lynch, J.W., & Connell, F.A. (2001) Ecological analysis of teen birth rates: association with community income and income *inequality*, Maternal and Child Health Journal, 5(3), 161-167.
43. Gold, R., Kennedy, B., Connell, F., & Kawachi, I. (2002) *Teen births, income inequality, and social capital: developing an understanding of the causal pathway*, Health Place, 8(2), 77-83.
44. Pickett, K.E., Mookherjee, J., & Wilkinson, R.G. (2005) *Adolescent birth rates, total homicides, and income inequality in rich countries*, American Journal of Public Health, 95(7), 1181-1183.
45. Wilkinson, R.G., & Pickett, K.E. (2006) *Income inequality and population health: A review and explanation of the evidence*, Soc Sci Med, 62(7), 1768-1784.
46. A Time of Opportunity: Local Solutions to Reduce Inequities in Health and Safety. Available at http://www.preventioninstitute.org/component/jlibrary/article/id-81/127.html
47. Smoking and Tobacco Control Monograph #1. Retrieved from http://cancercontrol.cancer.gov/tcrb/monographs/1/ October 28, 2010.
48. Smoking and Tobacco Control Monograph #1. Retrieved from http://cancercontrol.cancer.gov/tcrb/monographs/1/ October 28, 2010.
49. Cokkinides, V., Bandi, P., McMahon, C., Jemal, A., Glynn, T., Ward, E. (2009) Tobacco Control in the United States—Recent Progress And Opportunities, CA Cancer Journal for Clinicians, 59;352-365.
50. World Health Organization, Tobacco Atlas. Retrieved from who.int/tobacco/statistics/tobacco_atlas/en October 22 2010.
51. Cokkinides, V., Bandi, P., McMahon, C., Jemal, A., Glynn, T., Ward, E. (2009) Tobacco Control in the United States—Recent Progress And Opportunities, CA Cancer Journal for Clinicians, 59;352-365
52. Ottoson, J., & Green, L. (2005). Community outreach: From measuring the difference to making a difference with health information. Journal of the Medical Library Association, 93, S49–S56.
53. Ullmann-Margalit, E. (1990). Revision of norms. Ethics, 100, 756–767.
54. Schlegel, A. (1997). Response to Ensminger & Knight. Current Anthropology, 38, 18–19.
55. (1997) *Work Group on Breastfeeding. Breastfeeding and the use of human milk*, American Academy of Pediatrics (AAP), 100(6), 1035-1039.
56. World Health Organization. Breastfeeding. Retrieved from http://www.who.int/topics/breastfeeding/en/ on October 29, 2010.
57. CDC (2009). Breastfeeding Report Card 2009, United States: Outcome Indicators. Retrieved from http://www.cdc.gov/breastfeeding/data/reportcard/outcome2009.htm
58. UNICEF, The State of the World's Children (2009). Retrieved from http://www.unicef.org/rightsite/sowc/pdfs/statistics/SOWC_Spec_Ed_CRC_TABLE%202.%20NUTRITION_EN_111309.pdf October 28 2010.
59. Family Health Bureau (2007). Retrieved from: http://www.familyhealth.gov.lk/services.php October 28, 2010.
60. UNICEF New York, Nutrition Section, Programmes (2010) *Infant and young child feeding programme review: Consolidated report of six-country review of breastfeeding programmes*. Retrieved from: http://www.unicef.org/nutrition/files/IYCF_Booklet_April_2010_Web.pdf October 28, 2010.
61. Rea, MF., Benacio, SI., Martines, JC., Savage, F. (1999) Counselling on breastfeeding: assessing knowledge and skills, Bull World Health Organ 77(6), 492-8.
62. International Labour Organization (2010). Maternity at work: A review of national legislation. Findings from the ILO's Conditions of Work and Employment Database. Second edition.
63. Martin Luther King Jr., March 25, 1966. National Convention of the Medical Committee for Human Rights, Chicago.