S U S T A I N A B L E J E R S E Y

SUSTAINABILITY SUMMIT

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Sustainability Brief: Public Wellness

The health of populations is a different issue than the health of individuals. Public or community "wellness" is even broader, addressing not only specific "health outcomes" but also how the structural integrity of the community itself affects wellbeing. Community health and wellness include but venture far beyond a focus on health care through the normal medical system, including an emphasis on preventive measures that are grounded in the community structure itself, and not just on medical efforts. One implication is that our nation and state do not have a "health system" per se, but rather a highly diverse network of health systems.

1 Background Information

1.1 Public Health Outcomes

Although health professionals have been developing indicators and methods of comparison regarding health outcomes, no consensus definition exists regarding what level of public health constitutes a "sustainable" condition, much less public "wellness." However, outlines of a broad approach are emerging, with a much greater focus on prevention of chronic illness, an understanding that the physical nature of neighborhoods directly affects health, and recognition that socioeconomic status correlates strongly to health outcomes. It is common to hear that this country has "the best health care in the world" but without any definition of terms. International statistics make clear that on the most important basis – comparison of health outcomes - U.S. health outcomes are significantly worse than those of other developed nations despite a much higher level of expenditure on health care (often to treat illness rather than prevent it), including for the following outcomes:

- Adverse birth outcomes
- Injuries and homicides
- Adolescent pregnancy and sexually transmitted infections
- HIV and AIDS
- Drug-related mortality
- Obesity and diabetes
- Heart disease
- Chronic lung disease
- Disability

The results vary between states or socioeconomic groups; however, even those groups with ample access to health care fare worse than similar groups in other nations (NRC and IOM 2013). A fundamental concern is that communicable disease (e.g., bacterial and viral infections) and injury are no longer the dominant

causes of morbidity and mortality in this country; chronic diseases and their effects are now the primary causes for roughly 70 percent of deaths and nearly 75 percent of the nation's health care spending (IOM 2012b; RWJF 2011). Chronic disease is related more to eating and exercise options and habits, community environmental hazards, harmful living and working conditions, income (which allows greater ability to implement healthy choices) and education (which provides more ability to make healthy choices). Hanna and Coussens (2001) note findings that "inadequacy of health care accounts for about 10 percent of premature mortality, genetics for about 20 percent, environment for about 20 percent, and health behaviors and life-style for about 50 percent."

Poorer health has direct effects on social equity and on the economy. Ethnicity is not the direct cause of these negative consequences, but does relate strongly to a lack of education and income, and concentration in poor neighborhoods (through ongoing implicit or explicit segregation), associated with certain ethnic groups that make healthy lives less feasible (RWJF 2008a). To the extent that these factors create health problems for children, the potential is high for transmission across generations, as these health problems can continue throughout their lives. Neurotoxicity can damage a child's intelligence potential for life, such as from lead and mercury (Hanna and Coussens 2001). Asthma likewise can severely limit a child's ability to play, interact positively with others, and build self-esteem.

Development patterns and structural integrity also affect health (NRC 2011), even in relatively wealthy areas, such as through suburban sprawl. However in poorer urban areas, pollution and community structure issues tend to be concentrated, including but not limited to air quality, soil quality, recreational water quality, and industrial worker exposure to workplace hazardous substances. The result is a concentration of pollutant sources within concentrations of poverty, despite progress in pollution control. Poor neighborhoods also tend to have greater problems with indoor air quality due to building deterioration, but also due to less-effective street and building sanitation, degraded utilities, poor ventilation and moisture control, and inadequate pest control. The resulting environmental quality threats to public health raise major equity issues, reflected in the concept of "environmental justice."

Transportation systems are a ubiquitous aspect of life in the developed world, with a range of health threats ranging from excessive noise to pollutant exposure. The physical form and function of transportation affects health both directly and indirectly. "…childhood asthma, birth outcomes, and cardiovascular risk have all been shown to be associated with transportation and planning decisions that shape exposure to air pollution, including airborne particulate matter and toxic gases generated by traffic and other sources." (NRC 2011) As such, modifications to transportation systems also have both direct and indirect health effects.

Despite the emerging importance of community wellness issues, health care for individuals remains important. Health care access is not uniform or equitable. Research indicates that preventive health care is the most cost-effective. However, remedial health care will still be required for communicable diseases and to treat chronic diseases that are already in evidence or are essentially inevitable due to long-standing public health issues (RWJF, 2008a). Health care access can be measured in various ways and under various conditions, including:

- Affordability (percent of median household income, aggregate and by socioeconomic group)
- Availability of and distance to general practice or family physicians
- Availability of and distance to acute care and emergency care facilities
- Transportation availability (of a car in the household, or of transit in the absence of a car)

- Access during normal conditions
- Access during periods of public health stresses (such as a bad flu season)
- Access during public health emergencies such as a natural disaster

These various measures are not exclusive – all are valid depending on the nature of the issue at hand. Further, there is the question of health care quality, which is distinguishable from access per se. Rapid and affordable access to poor-quality care could be worse than less accessible but better care.

1.2 Food Access and Food Security

Food access is a measure of the extent to which retail sources of healthful foods are available to buyers, with particular attention to lower income households. Areas that lack accessible sources of healthful foods in significant quantities and quality are termed "food deserts." The extent to which households actually buy and eat available healthful foods is a separate question more associated with the public health issues discussed above, as even high income families with unlimited food choices can engage in highly unhealthy eating habits.

Food security addresses the extent to which households can afford to purchase and use accessible, healthful foods on a routine basis. From a global perspective, food in this country is cheap, with Americans on average spending less than other countries. However, food costs are high for those living in poverty; as with many other aspects of public wellness, food security evidences major socioeconomic variability. Despite a high average income and a low average share of household income going to food purchases, "…the proportion of U.S. residents who are food insecure is greater than the global average." (IOM and NRC 2013)

2 Sustainability Issues

2.1 Unsustainable Public Wellness

The health systems of this country have aspects that work effectively and efficiently, and others that do not. A system is clearly unsustainable that costs consistently more as a percent of national income and household, while resulting in less successful outcomes. Without significant changes, our system will become even more unsustainable with demographic change toward a higher ratio of retirees to workers. A system that results in highly inequitable health outcomes is also unsustainable, in part because those least able to afford healthy places to live, healthy lifestyles and health care are most harmed by the lack of all three (IOM 2012a; RWJF 2008a). We can see unsustainability as a situation where disparities in wellness and health increase, total health care expenditures increase relative to household and national income, chronic disease incidence increases, health care costs related to disease response are an increasing percentage of total health care costs, health care activities increase the potential for future health care problems (e.g., increases in multiply-resistant pathogens due to overuse of antibiotics), disease migration increases due to insufficient management of global mobility, and health outcomes increasingly lag those of other nations. The net result would be a significant reduction in the competitiveness of this nation on the world market.

2.2 Assessment of Public Wellness

The Robert Wood Johnson Foundation's Commission to Build a Healthier America (RWJF 2009a) suggests that "In a healthy society, every individual, at every age:

- eats a nutritious diet and engages in regular physical activity;
- avoids risky behaviors including smoking, excessive drinking and substance abuse;
- lives in housing that protects and promotes physical and mental well-being;
- enjoys safe and healthy neighborhoods and communities designed to promote physical activity and social interactions, and that are free from environmental toxins;
- attains education adequate to participate in the economy, make informed decisions, and safeguard the health of oneself and one's family;
- works in environments that protect workers from health hazards, encourage healthy choices and treat people with dignity;
- receives appropriate, high-quality physical and mental health care; and
- enjoys adequate income to afford all of the above."

The national Healthy People initiative (Healthy People 2020a) suggests that public wellness is a condition where our society reaches the following goals:

- "Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Promote quality of life, healthy development, and healthy behaviors across all life stages."

Specific health outcomes are measured in three fundamentally different but related ways. One is the measurement of outcomes within a specific single geographic area, such as a state or nation, with no comparison to other areas, as in Healthy People 2020 and Healthy New Jersey 2020. Another is a comparison of outcomes among geographic areas, such as between the states of this nation or between nations (e.g., NRC and IOM 2013). Finally is a comparison of outcomes across discrete populations and cohorts, including socioeconomic status (e.g., IOM 2012a, RWJF 2008a). The health outcomes used are similar for all three. However, these outcomes, and the objectives and targets derived from them, have significant shortcomings:

- There is no hierarchy of objectives, where some are considered more important than others.
- Targets for most objectives are not based on "sustainability" but rather on improvement from a baseline condition – useful in its way, but not sufficient for the purposes of defining "sustainable" wellness.
- There is no mechanism for assessing public wellness at any level of abstraction, to achieve a "gestalt" perspective of overall public wellness.
- To the extent that achievement of a target requires efforts not related to direct health care, it may be difficult to translate the target into actions that make sense to non-health decision makers.
- Objectives often address improved diagnoses of existing disease (e.g., colorectal cancer screenings) or health care after disease is already diagnosed, rather than disease prevention.

As such, the objective often are not focused on the most cost-effective approaches to wellness, but rather on health care for the purpose of finding problems or providing care after a problem occurs. The literature indicates that this current status of public wellness indicators will not easily be rectified.

2.3 Challenges in New Jersey

New Jersey is one of the wealthiest states in the nation, by median household income. However, various health outcomes trail those of the best states; the Robert Wood Johnson Foundation (RWJF 2008c) found that except for the most highly-educated mothers, infant mortality rates among all education levels and races/ethnicities were higher than the rate exhibited by the best state. Similar patterns exist for both general childhood health status (ranked 28th at 15.6% less than optimal health, RJWF 2008b) and general adult health status (ranked 29th at 43% less than very good health, RWJF 2008c), but in these cases no socioeconomic group even approaches the national benchmarks. New Jersey is doing far worse than the best states (New Hampshire and Vermont, respectively) for these two measures.

Healthy New Jersey 2020 (NJDOH, 2013) is derived from the national Healthy People 2020 program. Healthy New Jersey 2020 does incorporate the federal Healthy People 2020 goals, but without a mechanism to measure their overall attainment. Targets were generated specifically for New Jersey relative to statewide baselines. Sub-objectives by major race and ethnicity are specific to New Jersey and acknowledge that the baselines for each may and often do vary, which is a welcome improvement. As with the national program, though, the Healthy New Jersey 2020 objectives embrace a reductionist approach – each objective is considered independently and there is no overarching methodology for assessing public wellness, nor are New Jersey baselines or targets compared to any set of national norms or benchmarks. Current New Jersey conditions for the many objectives range very widely depending on the issue or disease.

Food access has gained more attention in recent years, with involvement of the Lieutenant Governor. A recent study by the Food Trust for the NJ Food Marketing Task Force found that despite New Jersey's status as a wealthy state, "concentrated poverty is very high, with a majority of the poor living in urban neighborhoods. And yet throughout the state, there are fewer per capita supermarkets compared to other states in the region." (Food Trust 2009) As a high-cost state, food security issues are also a significant issue.

3 Sustainability Responses

The difficulty, as with so many sustainability issues, is the lack of broadly applicable targets. How good is good enough to be truly sustainable? For how many aspects of public wellness must targets be met to consider society broadly sustainable regarding the overall issue? It is instructive to look at the list of health objectives in Healthy New Jersey 2020 – there are 113! While personal responses regarding overall health have been used – if someone perceives that they are in good health, they likely are – such approaches leave a lot of potential for unforeseen health consequences and lack any sense of cause-effect relationships.

4 Implications

There are many implications to the proposed sustainability statement for public wellness, including:

- Health is considered broadly, to include not only physical but also mental health;
- "Sustainability" per se is not defined as an absolute condition, but rather by comparison to peers, due to the lack of methods for aggregating health outcomes and assessing true sustainability;
- Wellness must be assessed both at both at the geographic scale (the state) and for socioeconomic groups, which should provide pressure to create and focus interventions relevant to each group;

- Costs matter, both at the geographic scale (the state) and for socioeconomic groups, which should provide pressure to achieve more cost-effective health outcomes through prevention.
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5 Defining & Tracking Sustainability

Sustainable public wellness exists when, in the aggregate and within major socioeconomic sectors, the conditions for New Jersey residents provide:

- health conditions equivalent to the best outcomes exhibited by other states and peer nations
- minimized at a cost to society relative to both state domestic product and household incomes
- effective prevention of acute and chronic disease
- health care methods that are intrinsically sustainable, and do not constitute a major burden that reduces our ability to achieve sustainability in other critical social functions.

Table 1 provides preliminary indicators and targets. Municipal action will be feasible with regard to Measures 1 (regarding physical community structure, parks and recreation systems); 2 and 5 (regarding health department functions in vaccination, food establishment inspections, tracking of communicable diseases, etc.); 3 (regarding local food pantries and other family support systems); 4 (regarding provision of municipal services that replace or augment higher-cost services); and 6 (regarding all of the above).

6 Conclusions

National public health outcomes across all socioeconomic groups do not match those of other wealthy nations despite much higher health care expenditures. New Jersey public health outcomes likewise are not matching those of the healthiest states in this country, despite having one of the highest per capita income levels. A critical issue appears to be that our health systems focus far too little attention on the prevention of chronic disease, and therefore must focus immense resources on treating disease occurrences. Major progress on public wellness requires attention to preventing disease so that treatment is not required. Doing so will require a restructuring and refocus of health expenditures to effective public wellness approaches, which over time will lead to reduced demand for treatment of diseases. Attention must be focused both on urban (and poor) areas with their high incidence of pollution and inadequate buildings, and on suburban areas with their dependence on automobiles and development patterns that contribute to sedentary lifestyles and obesity. However, it is critical to note that the most disadvantaged socioeconomic groups live in the least healthy areas, and the health outcomes for these groups are far worse than for those of greater means.

Table 1: Preliminary Public Wellness Sustainability Indicators and Targets

Sustainability Definitions	Preliminary Sustainability Indicators	Preliminary Targets	Scale of Analysis	Availability and Period of Data
Sustainable public wellness exists when, in the aggregate and within major socioeconomic sectors, the conditions for New Jersey residents provide • health conditions equivalent to the best outcomes exhibited by other states and peer nations • minimized at a cost to society relative to both state domestic product and household incomes • effective prevention of acute and chronic disease • health care methods that are intrinsically sustainable, and do not constitute a major burden that reduces our ability to achieve sustainability in other critical social functions. .	1. Lifespan increases to the best norms, aggregate and by socioeconomic cohorts	National health benchmark (best state) and OECD health benchmark (best nation)[1]	State, region or large counties	Available from U.S. Census and other sources, long-term data sets
	2. Preventable injuries and chronic and acute disease incidence decreases to the best norms, aggregate and by age and socioeconomic cohorts, and within specific communities	National health benchmark (best state), OECD health benchmark (best nation), New Jersey benchmark (best similar community)	State, region or large counties	Health Board data reported to NJ Department of Health and Senior Services, long-term data sets
	3. Food access increases and food insecurity decreases for low-income households to the best norms, with very low food security decreasing to insignificant levels	National health benchmark (best state), OECD health benchmark (best nation), New Jersey benchmark (best similar community)	State, region, county or groups of adjacent municipalities	Ad hoc studies
	4. Health and wellness costs are affordable, on aggregate and for low- and moderate-income households	Total health and wellness costs per household, including community and individual preventive and reactive interventions	State, region or county	
	5. Acute health care costs decline relative to economy	Acute health care costs as a percentage of total health and wellness costs and of State GDP	State or region	
	6. People feel healthy, leading to increased social and economic wellbeing	Health surveys	State to neighborhood	World Happiness Index, Genuine Progress Indicator

[1] Quality-adjusted life year (QALY) or health-adjusted life expectancy (HALE) are noted in IOM (2012c), Table 3-2

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