Healthy people, healthy communities, and healthy planet: A triple aim for all of us

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Complete List of Authors:	Francis, Damon; Health Leads Cohen, Gary; Health Care Without Harm Bhatt, Jay; American Hospital Association Brask, Charlotta; Stockholms lans landsting Devnani, Mahesh; Post Graduate Institute of Medical Education and Research, Hospital Administration Surgenor, Gael; Auckland Council
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AUTHORS: Damon Francis, Gary Cohen, Jay Bhatt, Charlotta Brask, Mahesh Devnani, Gael Surgenor

TITLE

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STANDFIRST

The positive impact of health care on health outcomes around the world is undermined by the sector's contributions to social inequity and environmental damage, which are major drivers of morbidity and mortality around the world. To be consistent with our responsibility to current and future generations, health care providers must move from a narrow focus on individual health toward a more comprehensive vision of health in which ***healthy people live in equitable and resilient communities on a sustainable planet.***

TEXT

Over the past several decades, the world has made significant progress on health outcomes with large increases in life expectancy, large decreases in childhood mortality, and many breakthroughs in health interventions.(1) Although these improvements have not been evenly distributed, some of the biggest have occurred in the countries with the most difficult health challenges. However, even as health care advances have improved many lives, the sector often contributes to poor health by exacerbating social inequity(2–4) and environmental damage,(5,6)(7) both of which are major factors in the growing burden of non-communicable diseases such as cardiovascular disease, chronic respiratory diseases, and diabetes.(8,9)

The 17 Sustainable Development Goals (SDGs) adopted by world leaders in September 2015 recognize that human well-being depends on reducing social inequity and protecting the environment.(10) A recent study has demonstrated that the global health care sector is critical to achieving the SDGs and the comprehensive vision of health behind them.(11) Among 10 sectors and 16 SDGs analyzed, health care is the most important sector for achieving 6 of the goals, including those related to poverty, education, and employment. Health care is also in the top 3 for an additional 7 goals — more frequently cited than any other sector.

In this article, we highlight some of the negative health impacts associated with health care's contributions to social inequity and environmental damage, and we present examples of health care

organizations that are reversing those harmful effects by pursuing a three-part aim of ***healthy people, living in equitable and resilient communities, on a sustainable planet.*** We focus on evidence and examples in three topic areas – "Sustainable Energy & Production", "Resilient Food Systems" and "Healthy Homes and Neighbourhoods for All."

Sustainable Energy and Production

Climate change has rapidly become a critical driver for global morbidity and mortality. The World Bank estimates that climate change can exacerbate existing health inequities by putting more than 100 million people back into extreme poverty by 2030.(12) Another recent study conservatively estimates that climate change will increase mortality by 35 per 100,000 or 3.9 million lives per year by 2099, with a much heavier toll on low income regions.(13)

While many countries have not done an extensive assessment of their health sectors' contributions to climate change, the National Health Service estimates that the health sector represents 39% of all public sector greenhouse gas emissions in England.(5) In the United States and Australia, health care contributes 9% and 7% of greenhouse gas emissions in each country respectively.(6,14)

Pollution and toxic waste rank alongside climate change as a major threat to health and sustainability, particularly for low income communities.(15)(16) The World Bank estimates that 23% of child deaths among residents of India could be attributed to pollution, which means that about 350,000 children under five die each year as a result of bad air, contaminated water or similar problems.(17) Unfortunately, health care is a significant contributor to morbidity and mortality from pollution. In the United States, for example, harmful health effects from pollutants associated with health care are on par with those of preventable medical errors in hospitals, which are considered to be a national epidemic.(18)

Increasingly, health care organizations of all sizes are implementing strategies to limit their harmful environmental impacts. By switching to renewable energy and reducing health care waste, they are not just reducing greenhouse gas emissions and pollution,(19) but also contributing to growth in renewable energy employment(20) and significant financial savings.(21)

Box 1. Sustainable Energy and Production

Gundersen Health System in the state of Wisconsin in the United States was 80% dependent on coal to operate its facilities in 2006. The organization recognized that reliance on coal fired power added to local respiratory health problems and the negative health impacts of climate change globally. They also wanted to support their community's economic health and reduce their operating costs. Gundersen decided to become the first energy independent health system in the Unites States. Over the next several years, they co-invested with other institutions in a variety of community based clean energy projects, including wind power with a local dairy, a bio-gas facility with a local landfill and a wood pellet production facility with a local paper mill. Gundersen invested several million dollars in these energy projects, realizing a net profit of more than $1 million each year from these investments. The system has become the United States' first energy independent health care system, critical for resilience to extreme weather events when the grid may fail. It has also become more embedded in the community, saved money through its investments, and now serves a model in the health care sector for addressing climate change.(22,23)

The Stockholm County Council, a local health authority that is also one of Europe's largest health care providers, has led a number of initiatives to address climate change and harmful health care waste. In 2004, The Stockholm County Council installed a pilot facility at Karolinska University Hospital that splits nitrous oxide -- a common gas for medical use, with 300 times the global warming impact of carbon dioxide, and a contributor to ozone depletion -- into harmless nitrogen and oxygen. The facility was the first of its kind in the world, and the program has since been extended to all hospitals within the region. The Council also works to reduce the emissions of active substances from the production of pharmaceuticals by setting sustainability criteria in procurement to ensure that the suppliers have implemented procedures to monitor and control harmful discharge and emissions. Additionally, the Council has incorporated data on the environmental impact of pharmaceuticals into the development of a drug formulary known as the Wise List, which has had the added benefit of reducing health care costs.(24,25)

Healthy Families New Zealand was established by the Ministry of Health to prevent chronic disease with a comprehensive and coordinated approach rooted in leadership of

community residents. In Auckland a collaborative initiative with the Sikh community to turn waste land into food production and to create a food forest found that it is customary in the Sikh community to dispose of a fabric used in religious rituals in incinerators, creating air pollution and greenhouse gas emissions. In partnership with Healthy Families and others, they developed a program to share the fabric with other communities who could reuse it. Since December 2017, women from Samoan, Tongan, Maori and Cook Islands communities, and others from community based organizations in Auckland, have been creating up-cycled products that provide additional income and the associated health benefits to hundreds of families. In addition to the community economic benefit, avoiding incineration or disposal in the landfill prevents the equivalent of 3.6 tonnes of CO2 emissions a year, which is the equivalent of taking 2.5 cars off the road in Auckland.(26)

Resilient Food Systems

Agriculture and food production can damage the environment through extensive pesticide use and expose farmworkers to toxic chemicals that are linked to cancer, birth defects and neurological damage.(27) Unhealthy processed food has contributed to a dramatic rise in obesity and non-communicable diseases around the world.(28) Industrial meat production is an important contributor to antibiotic resistance,(29) which in Europe causes morbidity and mortality on the order of influenza, tuberculosis, and HIV combined,(30) and is projected to significantly increase health care costs over the next decade.(31) Food service and production jobs have high rates of workplace injuries and low wages that harm people's health.(32) Many hospitals contribute to these issues, serving food that causes the same diseases they are treating through its low nutritional quality and unsustainable production methods.(28,33)

Health care organizations are beginning to improve the food they serve their patients, and the systems that produce that food. Increasingly, they are treating "food as medicine" — providing prescriptions for fruits and vegetables, teaching cooking classes, and integrating other creative approaches to healthy eating with clinical care. They are also leveraging their purchasing power to support local and sustainable agriculture in the communities they serve, modeling healthy food environments and contributing to healthier food systems and guaranteed markets for sustainable growers.(34)

Box 2. Resilient Food Systems

The Vienna Hospital Association is a group of eleven hospitals, nine geriatric centers and six long term care homes in Vienna, Austria. It has 30,000 employees, 400,000 inpatients and serves 30,000 patient meals per day. As part of the City of Vienna's green procurement policy, more than 30% of all the ingredients in the food served across the hospital system are organic, and most of this food is sourced from local suppliers. They serve less meat and also only provide fresh water from the tap rather than bottled water. The health care sector's food purchasing strategy is also embedded in the City's climate action plan, which requires a 50% reduction in greenhouse gas emissions by 2020 for products procured. Through this integrated approach, the hospital system is taking better care of its patients, modeling healthy food environments in their facilities, supporting sustainable agriculture in their communities, and addressing their climate footprint all at the same time.(34)

Healthy Homes and Neighborhoods for All

Where people live is perhaps the single most important determinant of their health status. Stark disparities in health outcomes between neighborhoods that are within walking distance of one another have been documented in high- and low-income countries, as a result of inequitable distributions of power, money, and resources.(35,36) Health hazards that originate within the home are a major cause of health problems through exposure to many factors, including home injuries, chemical substances, mold and damp, pests and infestations, poor access to water and sanitation, proximity to pollution sources, and inadequate protection from extreme weather.(37)

In spite of the fact that health challenges and their solutions are found in the homes and neighborhoods where people live, and that nations focusing their health care resources on neighborhood-based primary care can achieve remarkable results,(38) much of the health care sector continues to concentrate its activities in hospitals and specialty care far removed from these places and issues.(39) Global initiatives to increase investment in the community conditions that drive health outcomes have frequently been opposed by powerful interests, including some health insurers and health professional organizations.(40)

As health care organizations recognize that health is driven by home and neighborhood contexts, they are applying new strategies that are centered outside of clinics and hospitals and focus on root causes of disease, in some cases achieving short term financial benefits as well.(41) These approaches are often led by organizations of patients and community leaders, and include

neighborhood-based primary care,(42) as well as purchasing, hiring, and investment strategies that support improved health outcomes for disadvantaged communities.(43)

Box 3. Healthy Homes and Neighborhoods for All

Chagas Ecohealth is a collaboration of community residents, health ministries, researchers, and others working to develop strategies to stop the spread of Chagas disease in Central America using an approach rooted in local ecology and community-driven problem solving. Chagas disease causes approximately 40,000 new infections each year worldwide, and in Guatemala alone, over 4 million people are at risk of transmission of the disease by Triatomine insects ("kissing bugs"). Traditional approaches to preventing the transmission of Chagas relied on annual insecticide spraying of homes, which is expensive, damaging to the environment, and has very short-lived effects. One collaborative intervention in Guatemala demonstrated that targeted home improvements using local labor and materials dramatically reduced levels of Triatomine infestation in homes, and that improvements were sustained over time. The intervention also contributed to other health benefits, to local economic activity, and to a reduction in the use of substances that harm the environment.(44,45)

Nationwide Children's Hospital, in partnership with Community Development for All People (CD4AP) and other groups in Columbus, Ohio in the United States developed an intervention to improve housing conditions in a neighborhood that had been historically disadvantaged through systematic racial segregation and economic exclusion. Nationwide Children's provided over one quarter of the $22.6 million total investment from community partners, and CD4AP brought strong representation from residents, many of whom were patients of Nationwide, to the development of the intervention. Together, the partnership rehabilitated buildings, developed new housing, and created programs to ensure affordability for renters. Early outcomes include a reduction in vacancy rate, the chief concern of neighborhood residents, from >25% to 6%, and associated increases in graduation rates and decreases in homicides, with additional improvements in health expected over the long term.(46)

CONCLUSION

In his 1981 essay, Solving for Pattern,(47) Wendell Berry discussed a remarkably similar challenge to the one we currently face in health care, the "dilemma in agriculture now…that the industrial methods that have so spectacularly solved some of the problems of food production have been accompanied by 'side effects' so damaging as to threaten the survival of farming." He proposed that farmers and others focus on a specific kind of solution --

> …that which causes a ramifying series of solutions… [a] pattern of the farm that is biological, not industrial, and that involves solutions to … the whole complex of problems whose proper solutions add up to health: the health of the soil, of plants and animals, of farm and farmer, of farm family and farm community, all involved in the same inter-nested, interlocking pattern…The planet is recognized as an interdependent whole."

Some health care organizations are already demonstrating that the damaging "side effects" of environmental damage and social inequity associated with narrow focus on individual health care can be reversed. They are creating this specific kind of solution that "causes a ramifying series of solutions" by focusing on a triple aim that can and should be the aim for all of us -- healthy people, living in equitable and resilient communities, on a sustainable planet.

KEY MESSAGES

- Social inequity and environmental damage cost many lives, and cause significant suffering. Unfortunately, the health care sector often contributes to these harms as we strive to care for individuals and fail to see the effects of our actions on communities and the planet.
- To reverse these harmful effects, health care practitioners and organizations must adopt a broader aim of healthy people, living in equitable and resilient communities, on a sustainable planet.
- Examples demonstrate the power of the health care sector to achieve simultaneous results on all three levels.

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CONTRIBUTORS and SOURCES

DF advises a range of health care organizations on interventions to address social determinants of health at the individual and community level. GC leads a global coalition of health care organizations to improve environmental health worldwide and in the communities they serve. JB has studied and reported widely on population health and health equity initiatives, and leads research and educational activities for a national network of hospitals. CB leads sustainability efforts for a local health authority. MD has studied and reported widely on ethical issues in the translation of global and national policy to local contexts. GS directs a social innovation unit in a local health authority.

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