REPORT 8 OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH (A-09)

Sustainable Food (Resolution 405, A-08) (Reference Committee D)

EXECUTIVE SUMMARY

Objective: To address how medical schools, hospitals, and other health care facilities can model and encourage healthy eating in a manner that supports environmentally sustainable agricultural and food system practices. This report defines sustainability within the context of the overall food system and outlines areas requiring further attention.

Methods: Literature searches for articles published through February 2008 were conducted in the PubMed database using the search terms "sustainable food," "sustainable agriculture," and "organic food." Articles were selected that focused on human health and on the role health professionals and health care institutions could play in regard to these issues. Web sites managed by federal agencies and applicable professional and grassroots organizations were also reviewed for relevant information. Additional articles were identified by reviewing the reference lists of pertinent publications.

Results: Sustainability refers to the capacity of being maintained indefinitely, in a manner that meets present needs without compromising the ability to meet future needs. It is a continual process of improvement that must constantly respond to the economic, ecological, and health inputs to the system. Food systems encompass food production, processing, packaging, labeling, distribution, access, and consumption. A sustainable food system includes sustainable agricultural practices (environmental stewardship, profitable farm incomes, and stable farm families and communities) as well as other practices within the entire food system that promote and preserve ecology (conservation of resources and genetic biodiversity), social values (just working conditions, humane treatment of animals, geographical and economic accessibility to food), health (nutritious food without potentially harmful contaminants), and economic viability (fair incomes for families and local economies). Organic, natural, and local foods are not necessarily healthy and/or sustainable, although healthy food should be both nutritious and sustainable. Using a "more/less" rather than "either/or" approach, local food is usually the most sustainable, being generally less resource intensive and less vulnerable to contamination, while providing fresher and less processed food and fostering healthier relationships between farmers and consumers. However, even eating more conventionally produced (i.e., nonorganic, nonlocal) fruits and vegetables in place of animal products improves the sustainability of the food system. Several organizations offer information, resources, and recommendations to help schools and health care facilities leverage their community and market leadership to adopt healthier, sustainable food policies and practices. Although more research is needed to clarify the best means of achieving a healthier food system, it is essential that it incorporate a systems approach.

Conclusions: Healthy diets are rich in fruits, vegetables, and whole grains, and low in unhealthy fats, sodium, and added sugars, but they also support environmental sustainability, economic viability, and human dignity and justice. Unhealthy food systems are not sustainable, and contribute to the very health problems the health care system is trying to solve – at extraordinary costs both economically and in terms of quality of life. It is essential that health care organizations become both models and advocates of healthy, sustainable food systems that promote wellness and that "first do no harm."

REPORT OF THE COUNCIL ON SCIENCE AND PUBLIC HEALTH

CSAPH Report 8-A-09

Subject: Sustainable Food

(Resolution 405, A-08)

Presented by: Carolyn B. Robinowitz, MD, Chair

Referred to: Reference Committee D

(James L. Milam, MD, Chair)

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Resolution 405 (A-08), "Sustainable Food," introduced by the American College of Preventive Medicine at the 2008 American Medical Association (AMA) Annual Meeting and referred to the Board of Trustees, asks:

That our AMA Council on Science and Public Health (CSAPH) provide a report at the 2008 Interim or 2009 Annual Meeting to determine whether and how our AMA should encourage medical schools, hospitals, offices, and other health care facilities to adopt policies and implement practices that increase the purchasing and serving of food that promotes health and prevents disease, while minimizing the use of nontherapeutic antibiotics, greenhouse gas emissions, Concentrated Animal Feeding Operation (CAFO) and other industrial agricultural food sources; and

That the same CSAPH report address whether and how our AMA should call on physicians and other health care professionals to serve as role models and educators by participating in and promoting a healthier and more sustainable food system that improves eating habits, increases patient and public health, and supports the long-term social, economic, and environmental well-being of communities in the US and throughout the world.

A recent CSAPH report on green initiatives and the health care community, presented at the 2008 Interim Meeting, addressed sustainable food practices in the context of hospital food purchasing practices. This report expands on the topic to address how medical schools, hospitals, and other health care facilities can model and encourage healthy eating in a manner that supports environmentally sustainable agricultural and food system practices, which in turn may provide additional social, economic, and health benefits to their surrounding communities and beyond.

CURRENT AMA POLICY RELATED TO SUSTAINABLE FOOD

The AMA currently has several policies that address environmentally friendly agricultural practices and encourage physicians to serve as educators and role models for healthy eating behaviors. These policies (AMA Policy Database):

- Encourage health care facilities to purchase and serve food that promotes health and prevents disease (H-150.949 and D-150.989);
- Oppose the nontherapeutic use of antimicrobials in agriculture (H-440.895);

- Support systematic safety assessments of genetically modified foods and continued research into the potential health and environmental impacts of genetically modified crops (H-480.958);
- Urge maximum feasible reductions of all forms of air pollution (H-135.998);
- Support alerting the public about the health hazards of environmental pollution and the need for expanded research and control measures (H-135.996);
- Encourage physicians to be spokespersons for environmental stewardship (H-135.973 and H-135.969); and
- Support the development and use of ecologically sustainable products, foods, and materials when possible, as well as community-wide adoption of "green" initiatives and activities by organizations, businesses, and health care entities (H-135.939).

METHODS

Literature searches for articles published through February 2008 were conducted in the PubMed database using the search terms "sustainable food," "sustainable agriculture," and "organic food." Articles were selected that focused on human health and on the role health professionals and health care institutions could play in regard to these issues. Web sites managed by federal agencies and applicable professional and grassroots organizations were also reviewed for relevant information. Additional articles were identified by reviewing the reference lists of pertinent publications.

BACKGROUND

Nutrition, public health, and sustainable agriculture have typically been separate, nonoverlapping fields, as exemplified by the stark inconsistencies between US farm policy and the Dietary Guidelines for Americans. The current US food system is highly industrialized, focusing on the production of animal products and federally subsidized commodity crops, such as corn and soybeans. This has resulted in a highly processed, calorie-dense food supply, instead of one rich in a variety of fruits, vegetables, and whole grains, as recommended by the Dietary Guidelines for Americans. The poor quality diets supported by this system contribute to four of the six leading causes of death in the United States: heart disease, stroke, diabetes, and some cancers. Individuals of lower socioeconomic standing are more likely to consume these subsidized, highly processed foods, and are likewise at increased risk of related adverse health outcomes.

 Beyond the issue of poor nutritional quality are methods of food production and distribution that have additional negative effects on human and environmental health.⁴ These methods have contributed to the development of antibiotic resistance; air and water pollution; contamination of food and water with animal waste, pesticides, hormones, and other toxins; increased dependence on nonrenewable fossil fuels (including fertilizers)^{2, 4}; and a food system that is increasingly vulnerable to accidental or intentional contamination.³ These methods of food production and distribution are inherent parts of the prevailing agricultural system, which is may be referred to as "conventional farming, modern agriculture, or industrial farming."⁵

Clinical approaches to addressing diet-related health concerns are costly and not sustainable.⁴ Additionally, it is difficult for individuals to change their eating behaviors when many forces in the social, cultural, and physical environment do not support such change.⁴ The public looks to the health care community to provide leadership in the best practices to promote health. Medical schools, hospitals, and other health care facilities are key participants in the food system with potentially significant roles to play in fostering greater awareness, improving purchasing practices, and promoting consumption of healthy and sustainable food.

DEFINING SUSTAINABILITY

"Sustainability" has become a widely used term in social, economic, ecological, agricultural and food production sectors, although its precise definition remains relatively unclear and variable. In a general sense, sustainability refers to the capacity of being maintained indefinitely, in a manner that meets present needs without compromising the ability to meet future needs. Sustainability refers to continual processes of improvement, as well as to the products of processes/practices. As social, ecological, economic, and health inputs to a system continually change, so too must the system change in order to remain resilient and sustainable.

Sustainable agriculture refers to methods of producing food (and fibers such as cotton) in a manner that:

Provides profitable farm incomes;

 • Promotes environmental stewardship (protection and promotion of high soil quality; reduced dependence on nonrenewable fuels, synthetic fertilizers, and pesticides; and limiting adverse impacts on safety, and on wildlife, water quality, and other natural resources); and

Promotes stable and prosperous farm families and communities.

No one method or set of methods works for every farm, ranch, or community. However, collectively, these efforts contribute to improved sustainability not just in agriculture, but also in food systems and the public health.

 Sustainable food is defined within the context of the overall food system. Food systems encompass food production, processing, packaging, labeling, distribution (wholesaling, storage, transportation), access (grocers, restaurants, institutional food service, emergency food programs), and consumption (food purchasing, preparation, eating, and waste management). A sustainable food system includes sustainable agricultural practices as well as other practices within the food system that promote and preserve the following:

• Ecology. Natural resources should be conserved, renewable, or enhanced in ways that limit and/or recycle wastes and preserve genetic biodiversity.

• Social values. Workers throughout the food system should be treated justly in terms of rights, pay, and work conditions. Animals should be treated humanely. Culturally acceptable foods should be accessible to all consumers in terms of location and affordability.

Health. Food should be nutritious and contribute to a balanced diet, without potentially detrimental biological or chemical contaminants
 Economic viability. All food system activities should support livelihoods of families and

 • Economic viability. All food system activities should support livelihoods of families and contribute to local economic development, without concentrated economic control of large parts of the food system by any one entity.^{4, 6}

Local, state, federal, and international policies are central influences on the food system. These policies impact what and how food is grown, processed, labeled, and made available for consumption.⁶ Agricultural, food, and nutrition policies affect the choices people and organizations have, and in turn the health of individuals, communities, and the environment.

DEFINING ORGANIC, NATURAL, AND LOCAL FOODS

Organic, natural, and local foods are not necessarily one and the same. As described below, only organic food has a legal definition that distinguishes it, in at least some ways, from conventionally produced food. "Conventional" food has no formal definition; usually, it refers to foods grown using modern agriculture or industrial farming methods. These methods generally involve large-scale farms; single/row crops grown on the same land over several consecutive seasons; uniform high-yield hybrid crops (with limited biodiversity); extensive use of pesticides, fertilizers, and nonrenewable energy sources; high labor efficiency; and confined, concentrated livestock systems.⁵

Foods that are labeled "organic" must be produced and processed in accordance with the US Department of Agriculture's (USDA) National Organic Program standards. These standards require foods be produced without genetic engineering, ionizing radiation, and synthetic substances. Crops must be raised without most conventional pesticides or petroleum- or sewage sludge-based fertilizers. Organic meat, poultry, eggs, and dairy products must be produced from animals fed organic feed, given outdoor access, and not given antibiotics or growth hormones. Organic actually refers to the process of the food production, rather than the end product.

The term "natural" is not regulated by the USDA, except when used to describe meat and poultry. The USDA requires meat and poultry products labeled "natural" to be free from any artificial ingredient or added color, and be only minimally processed, such that the raw product is not fundamentally altered. In addition, the label must explain the use of the term natural (e.g., no added colorings, no artificial ingredients, minimally processed). Natural food is not necessarily organic or local.

"Local" does not refer to any set distances between the food source and the consumer; rather, it is a relative term that encourages the consumption of foods produced nearest to the consumer. Locally produced food tends to be picked at peak ripeness (which generally improves the flavor and nutrient content), requires less fossil fuel to transport, and can foster healthier relationships between farmers, consumers, and the environment. Locally grown foods are also usually less processed. Processed food products tend to be manufactured at a few key facilities that purchase their basic ingredients from around the country, or even around the globe, and in turn ship their products nationally and internationally. Not only does the production and distribution of such processed food use fossil fuels and generate emissions, but the plastic and paper packaging further depletes the environment of valuable natural resources.

Organic, natural, and local foods are not necessarily healthy, in that they may still be high in calories, saturated fat, sodium, and/or added sugars (e.g., whole milk, cheese, or cookies), or highly processed (e.g., organic white flour, chips, instant meals). Organic foods are not necessarily sustainable; in fact, many organic foods (like many conventionally grown foods) sold in the United States are from countries such as China or Argentina, and are therefore picked unripe (if fresh, not frozen), packaged, and transported over long distances. This can result in lower nutritional quality (compared to ripe fruit), further depletion of fossil fuels, and increased air pollution from emissions. Furthermore, organic, natural, and local foods are still at risk of contamination from microscopic organisms (e.g., due to contaminated water or unsanitary processing facilities).

HEALTHY FOOD IS NUTRITIOUS AND SUSTAINABLE

The Dietary Guidelines for Americans recommend 4 1/2 cups (9 servings) of fruits and vegetables daily for adults consuming the 2,000 calorie reference diet; they also recommend limiting consumption of saturated fats, sodium, and added sugars.¹¹ However, the United States would need

to increase its fruit and vegetable production by approximately 13 million acres to produce sufficient quantities of fruits and vegetables for the entire population to meet these recommendations. A recent report estimates that 86% of the land currently being used for fruit and vegetable production in the United States is threatened by development. Clearly, US farm and zoning policies are not sufficient to support the public health. Optimal public health requires a good, healthy food supply, but the United States cannot have a good, healthy food supply without a sustainable food system.

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Locally produced and organic foods are considered part of a healthy, sustainable food system for many reasons. They reduce the use of fuel, decrease the need for packaging and resultant waste disposal, preserve farmland, and/or support a greater diversity of crops. The related reduced fuel emissions contribute to cleaner air and in turn lower the incidence of asthma attacks and other respiratory problems. Organic meat production helps reduce the development of antibiotic resistance, as well as air and water pollution. Organic and local foods can have improved nutrient profiles: ripe produce, and some organic produce, contain peak amounts of micronutrients and phytochemicals, and pasture-raised, grass-fed animals produce leaner beef, and meat and milk with higher levels of beneficial essential fatty acids such as omega-3s. Some people also believe local and organic foods taste better, which may encourage increased consumption of fruits, vegetables, and lean meat, while also decreasing exposure to pesticides and hormones. Shorter supply chains in local food systems also lessen their vulnerability to food contamination.

 It is important to note that conventionally produced fruits and vegetables are still strongly associated with reduction of chronic disease risks (most diet-disease studies do not differentiate between organic and conventional produce). Likewise, production of conventional fruits and vegetables uses far less fossil fuel and water than does the production of meat. Reducing the portion sizes of meat (pork and beef) and the frequency of meat consumption limits health risks and can also contribute to a sustainable food system. The Food and Agriculture Organization of the United Nations estimates that livestock alone contributes 18% of all greenhouse gas emissions. Similarly, water use is greater for meat production: 6 gallons of water are needed to produce one serving of lettuce, 49 gallons to produce an 8-oz glass of milk, and 2,600 gallons to produce one serving of steak.

The development of food systems that are sustainable involves continually improving strategies that emphasize "more/less" rather than "either/or." For example, a sustainable food system is more localized rather than less, it is more environmentally sustainable rather than less, and there are more relationships among individual people in the food system rather than less. In other words, members of a food system, such as health care institutions, can "triage" their food supply in the context of the food system: 1) Can the food be sourced locally? 2) If not, can a local substitute be used? 3) If not, can a more distant food source be obtained that includes the same environmental, social, and economic characteristics preferred in the local food?

HOW HEALTH CARE INSTITUTIONS CAN TAKE A LEADERSHIP ROLE IN PROMOTING HEALTHY AND SUSTAINABLE FOOD SYSTEMS

 Communities look to medical schools, hospitals, and other health care facilities as leaders in achieving and maintaining optimal health, which includes not just the absence of disease but also the promotion of physical, mental, and social well being. While the connections between diet and health have long been recognized by the health care community, it is imperative to lead by example. Health care organizations are substantial components of the food system, with the total health care market for food and beverages estimated at \$12 billion annually.

Several organizations offer information and resources to schools, universities, and health care facilities to help them leverage their community and market leadership to adopt healthier food

purchasing policies and practices. These include the Green Guide for Health Care™ (GGHC), the Institute for Agriculture and Trade Policy (IATF), Yale's Sustainable Food Project, the American Dietetic Association, and the Health Care Without Harm coalition. The GGHC is a voluntary, self-certifying metric toolkit of best practices that covers multiple facets of environmental sustainability, not just food systems. Health Care Without Harm likewise covers a range of issues involving the environment, and provides a more extensive array of resources and information that may be particularly helpful for organizations that are just beginning to explore their role in a sustainable food system. Self-certifying metric toolkit of best practices that covers a range of issues involving the environment, and provides a more extensive array of resources and information that may be particularly helpful for organizations that are just beginning to explore their role in a sustainable food system.

Health Care Without Harm is an international coalition of 473 organizations in more than 50 countries, whose mission is to "to transform the health care sector worldwide, without compromising patient safety or care, so that it is ecologically sustainable and no longer a source of harm to public health and the environment." One of the coalition's key goals is to "encourage food purchasing systems that support sustainable food production and distribution, and provide healthy food on-site at health care facilities." Central to this goal is the Healthy Food in Health Care Pledge, which outlines key commitments that health care organizations should make to "first, do no harm" by realizing that wise use of food, and its responsible production and distribution, is actually preventive medicine that protects the health of patients, staff, and communities (Appendix). To date, at least 165 health care facilities in the United States have signed this pledge. On the coalities in the United States have signed this pledge.

Recognizing that a sustainable food system is a process, and that different organizations will have different capacities to change in different locales, Health Care Without Harm offers a full menu of options for organizations to choose from, with specific how-to suggestions, background information, policy statements, sample procurement policies, and examples of case-studies from organizations that have successfully implemented healthy food practices. Key recommendations include:

- Start a conversation within your organization about healthy food (e.g., form a "food team")
- Contract with a group purchasing organization, distributor, or food service provider that supports healthy food
- Implement purchasing policies for meat and poultry raised without nontherapeutic antibiotics
- Model local, nutritious, sustainable food at conferences, meetings, and workshops
- Buy milk produced without recombinant bovine growth hormone (rBGH or rBST)
- Buy organic and other certified food (e.g., Food Alliance Certified, Protected Harvest, Certified Humane, Fair Trade)
- Consider establishing an overarching food policy
- Buy food from local producers
- Become a fast food-free zone
- Limit use of vending machines and replace unhealthy snacks with healthy choices
- Host a farmers' market on hospital grounds
- Create hospital gardens to grow fresh produce and flowers
- Compost, divert, and reduce food waste
- Buy certified coffee²¹

AREAS REQUIRING FURTHER ATTENTION

Health care professionals tend to focus on health outcomes in individuals rather than in systems.³ However, hospitals, medical schools, and other health care facilities are part of a food system that has the potential to both benefit and harm individual health directly and indirectly.³ While support of sustainable food practices is not "high-tech" or procedure oriented, it promises significant improvements in health and economic costs to a health care system that is overburdened by diseases

caused, at least in part, by an unhealthy food system. More research is needed to clarify the best means of achieving a healthier food system (e.g., whether subsidizing a variety of organically produced fruits and vegetables will increase their consumption and decrease consumption of highly refined food products),³ but it is essential that the research and resultant policies and practices incorporate a systems approach.^{1,4} For example, instead of asking whether genetically engineered food is good or bad, a better question may be: does genetic modification help grow enough food in a sustainable fashion?⁴

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More attention also needs to be paid to the economic and regulatory policies that encourage the production of unhealthy, nonsustainable food at low immediate financial cost to consumers, at the expense of poorer health outcomes that cost far more to treat with medications and procedures than investments (at societal and personal levels) in healthy food. The US Farm Bill, which covers the bulk of federal agricultural and food policies (e.g., nutrition education, food assistance programs, conservation programs, agricultural trade), is one example of an issue with which members of the health care system should be more involved.

Educational efforts likewise should recognize that the development of healthy food systems involves continually improving strategies that emphasize "more/less" rather than "either/or." This may be particularly helpful when a lack of financial resources or geographic access is an issue. While healthier, more sustainable food is often more expensive than highly refined and processed foods, this tends to be more apparent when evaluating price per calorie⁴ than price per serving of food. For example, a bowl of homemade oatmeal costs far less than a fast food breakfast sandwich, and a single apple or orange is often comparable in price, or even less expensive, than a bag of chips or a candy bar. Even on a per calorie basis, soft drinks are more expensive than tap water. A meal of pasta, jarred spaghetti sauce, steamed frozen broccoli, lettuce and carrot salad, and tap water is healthier, more ecologically sustainable, and cheaper than a carry-out pizza dinner with soft drinks. The first meal is "more" sustainable and healthy – not perfect, but better than the alternative meal. Convenience, taste, access, and cooking skill are also factors in people's food choices that deserve more attention in efforts to promote a more sustainable food system.

To foster determination and dissemination of best practices, and to clarify areas where challenges remain, efforts by health care organizations to improve food systems should be well-documented and shared with the health care community and the public, both in a quantitative and qualitative fashion. Research that outlines the costs, cost savings, and any changes in short- or long-term health outcomes is also essential. Again, these issues are best framed within a systems approach.

SUMMARY AND CONCLUSION

Healthy food is part of a sustainable food system, in which food is defined not only by its nutrient content, but also by how and where it is raised, grown, processed, and distributed. Public health dietary guidelines, as well as dietary recommendations targeting individuals for secondary and tertiary prevention, cannot be met without a greater emphasis on sustainable agriculture and food production as part of a larger food system. The health care community has a highly visible leadership role to play in the promotion of health and wellness policies, which should "first do no harm." Healthy diets are rich in fruits, vegetables, and whole grains, and low in unhealthy fats, sodium, and added sugars, but they also limit the depletion of nonrenewable resources; air, water, and soil pollution; the development of antibiotic-resistant bacteria; and the risk of food contamination. Unhealthy food systems are not sustainable, and contribute to the very health problems the health care system is trying to solve – at extraordinary costs both economically and in terms of quality of life. It is essential that health care organizations become both models and advocates of food systems that promote optimal health.

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1	RECOMMENDATIONS	
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3	The Council on Science and Public Health recommends that the following statements be adopted in	
4	lieu of Resolution 405 (A-08) and that the remainder of this report be filed:	
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6	1.	That our American Medical Association (AMA) support practices and policies in
7		medical schools, hospitals, and other health care facilities that support and model a
8		healthy and ecologically sustainable food system, which provides food and beverages
9		of naturally high nutritional quality. (New HOD Policy)
10		
11	2.	That our AMA encourage the development of a healthier food system through the US
12 13		Farm Bill and other federal legislation. (Directive to Take Action)
13		
•	That our AMA consider working with other health care and public health	
15		organizations to educate the health care community and the public about the
16		importance of healthy and ecologically sustainable food systems. (Directive to Take
17		Action)

Fiscal Note: \$ 1000

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APPENDIX – The Healthy Food in Health Care Pledge, from Health Care Without Harm²⁰

This Healthy Food in Health Care Pledge is a framework that outlines steps to be taken by the health care industry to improve the health of patients, communities and the environment.

As a responsible provider of health care services, we are committed to the health of our patients, our staff, and the local and global community. We are aware that food production and distribution methods can have adverse impacts on public environmental health. As a result, we recognize that for the consumers who eat it, the workers who produce it, and the ecosystems that sustain us, healthy food must be defined not only by nutritional quality, but equally by a food system that is economically viable, environmentally sustainable, and supportive of human dignity and justice. We are committed to the goal of providing local, nutritious and sustainable food.

Specifically, we are committed to the following healthy food in health care measures for our institution. We pledge to:

Increase our offering of fruit and vegetables, nutritionally dense and minimally processed, unrefined foods and reduce unhealthy (trans and saturated) fats and sweetened foods.

Implement a stepwise program to identify and adopt sustainable food procurement. Begin where fewer barriers exist and immediate steps can be taken, such as the adoption of rBGH free milk, fair trade coffee, or selections of organic and/or local fresh produce in the cafeteria.

Work with local farmers, community-based organizations and food suppliers to increase the availability of fresh, locally-produced food.

Encourage our vendors and/or food management companies to supply us with food that is produced in systems that, among other attributes, eliminate the use of toxic pesticides, prohibit the use of hormones and non-therapeutic antibiotics, support farmer and farm worker health and welfare, and use ecologically protective and restorative agriculture.

Communicate to our Group Purchasing Organizations our interest in foods whose source and production practices (i.e. protect biodiversity, antibiotic and hormone use, local, pesticide use, etc) are identified, so that we may have informed consent and choice about the foods we purchase.

Develop a program to promote and source from producers and processors which uphold the dignity of family, farmers, workers and their communities and support sustainable and humane agriculture systems.

Educate and communicate within our system and with our patients and community about our nutritious, socially just and ecologically sustainable healthy food practices and procedures.

Minimize and beneficially reuse food waste and support the use of food packaging and products that are ecologically protective.

Report annually on implementation of this Pledge.