Integrating healthy food into health care practice is one of the most important strategies we have for addressing the epidemic of chronic disease, especially for low-income members of our community.

Establishing quality standards for that food – including for organic and sustainably raised – is also vital. By doing so, health care organizations can help build healthier, more equitable and more sustainable communities. If we don’t, the growth of food as medicine will continue to exacerbate inequity, environmental degradation and climate disruption.
It’s clear that our health, our food system, and our environment are interconnected – and that we must address all three if we’re to make a meaningful impact on the quality of life for all people – including farmers and food system workers – both today and into the future. We also know that not everyone has equal access to enough healthy food to support a full and productive life.

A new report released by the EAT Lancet Commission in January 2019 proposed a solution: adoption worldwide of a largely plant-based whole food diet would dramatically reduce deaths from chronic disease while maintaining our ability to feed the world’s population by 2050. This is the same diet Ceres Community Project promotes through our community education programs, the same diet that we teach to teens, and the same diet we provide to our clients.

Environmental Nutrition

Environmental Nutrition was first coined by Health Care without Harm (HCWH) in a 2014 paper. The approach recognizes that our food system is interconnected with our environment and has impacts far beyond the personal health of any one individual. Environmental Nutrition takes into account the health of all people involved in or touched by a meal – farmers and food system workers, but also anyone impacted by the air, soil or water that’s effected by agricultural practices. As evidence grows about the impact that conventional agriculture has on health, our environment and the climate crisis, it’s more important than ever that all of us, but especially companies and organizations sourcing and providing food, adopt an environmental nutrition approach.

Healthy food cannot be defined by nutritional quality alone. It is the end result of a food system that conserves and renews natural resources, advances social justice and animal welfare, builds community wealth, and fulfills the food and nutrition needs of all eaters now and into the future.

A Medically-Tailored Meal

People living with serious illnesses benefit from eating foods that are specifically designed for their diagnosis as well as the additional complications that come with that illness, such as treatment side effects. Many patients have more than one chronic condition, and shopping and cooking for a complex medical diet can be challenging.

Medically tailored meals are delivered to individuals living with one or more serious illnesses through a referral from a medical professional or healthcare plan. Meals and meal plans are tailored to the medical needs of the recipient by a Registered Dietitian Nutritionist (RDN), and are designed to improve health outcomes, lower cost of care and increase patient satisfaction. At Ceres Community Project we adhere to evidence-based nutritional guidelines for the major illnesses we address: cancer, heart disease and diabetes. These guidelines were established by the Clinical Committee of the Food is Medicine Coalition.
Our Policy and Systems Change Goals

Our policy and systems change work is focused on three primary goals which come directly out of our own work at the community level over the past twelve years.

1. Prove the case for medically tailored meals and other food as medicine interventions in improving the quality of life and outcomes for patients while reducing health care costs.

2. Disrupt health care to integrate medically tailored meals and other food as medicine interventions into medical care as a billable and reimbursable medical cost.

3. Promote sustainable and organic food as a key strategy for improving health equity and addressing personal, environmental and climate health.

Why these goals?

Food access improves health equity.
Food and nutrition insecurity is a significant driver of poor health outcomes for patients. To improve health equity, all people need access to healthy and affordable food, from pregnancy and early childhood through our senior years.

Health care is expensive. Food is not.
It’s much cheaper to ensure that people have a healthy diet than it is to pay for a hospitalization, and yet food is not currently considered a health care intervention. If we can demonstrate that healthy food can prevent and manage chronic illness and improve patient outcomes while reducing cost, we can dramatically expand access to healthy food for those who need it most – low-income community members who are struggling with one or more chronic illnesses – and help many more people live a healthier and longer life.

All food is not created equal.
Healthy, sustainably raised and organic whole food creates a ripple effect of good health: higher nutrient values in the food itself; lower pesticide burdens for farm-workers, and in the air and water; building healthy soil and the capacity to sequester carbon and mitigate the effects of climate change; creating jobs and building wealth in local communities. Supporting organic and sustainable food systems supports the full ecosystem of health for people, communities and the planet.

Social Determinants of Health

Social determinants of health (SDOH) are the social and economic conditions that constrain people’s ability to live a healthy life. Addressing social determinants – including access to enough affordable healthy food – is essential for improving health equity. According to the Centers for Disease Control & Prevention:

*Conditions in the places where people live, learn, work, and play affect a wide range of health risks and outcomes. These conditions are known as social determinants of health (SDOH). We know that poverty limits access to healthy foods and safe neighborhoods and that more education is a predictor of better health. We also know that differences in health are striking in communities with poor SDOH such as unstable housing, low income, unsafe neighborhoods, or substandard education. By applying what we know about SDOH, we can not only improve individual and population health but also advance health equity.*

---

**SOCIAL DETERMINANTS OF HEALTH**

- Healthcare system
- Economic stability
- Community and social context
- Food
- Education
- Neighborhood and physical environment

*from Becker’s Hospital Review*
Along with our colleagues in the national Food is Medicine Coalition, Ceres Community Project is engaged in research to prove that medically tailored meals – and other food as medicine interventions – can play a significant role in improving patients’ quality of life and health outcomes while reducing health care costs.

One in three patients who are admitted to the hospital are malnourished or become malnourished during their stay. Costs for these patients are about 20% higher, mostly due to longer stays and higher rates of readmission. Overall, disease-associated malnutrition leads to $15.5 billion annually in added health care costs. A study of Medicare patients with diabetes showed a 69% increased risk of death for patients who are malnourished, and increased risk of death within each of six common comorbidities.

We are currently conducting three pilots and/or formal research studies to help build the case that healthy food can improve patients’ health while reducing health care costs.

**Sonoma County SmartBox Pilot: Nutrition Education + Food = Better Health**

This pilot aims to prevent heart attacks and strokes by improving food access and nutrition education among low-income residents of southwest Santa Rosa. The 17 participating families had at least one adult with high or very high blood pressure and/or diabetes. All of the families were food insecure. The class was taught at a local elementary school in Spanish with English translation. All family members were welcome, and child care was provided. Along with the positive impacts noted below, more than half of the participants also saw improvements in blood pressure, hemoglobin A1c (diabetes measure) and/or cholesterol.

### SmartBox Pilot Results

<table>
<thead>
<tr>
<th></th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>I always have enough to eat</td>
<td>0%</td>
<td>60%</td>
</tr>
<tr>
<td>I ate no high sodium foods today</td>
<td>0%</td>
<td>38%</td>
</tr>
<tr>
<td>I eat ≥3 daily servings of vegetables</td>
<td>21%</td>
<td>78%</td>
</tr>
<tr>
<td>I understand the benefits of healthy eating</td>
<td>52%</td>
<td>100%</td>
</tr>
</tbody>
</table>

_Funder_ County of Sonoma, California Accountable Community of Health Initiative (CACHI)

_Partners_ St. Joseph’s Health, Redwood Empire Food Bank

_Patients_ 17 adults at risk of heart attack or stroke because of high blood pressure and/or diabetes

_Phase 1 (12 weeks)_ Weekly 90 minute nutrition class + SmartBox of 5 heart-healthy prepared meals for everyone in the family + medically tailored groceries + recipes

_Phase 2 (1 year)_ Monthly 90 minute nutrition education class (Underway)

**Cooking for myself is easier now, and I don’t crave sweets or carbs as much. SmartBox has made a difference in my life and body.**

~ Jan, SmartBox participant
California Congestive Heart Failure Nutrition Intervention Pilot: Making the Case for a Statewide Benefit

Thanks to CEO Cathryn Couch and leadership by California Senator Mike McGuire, the California Food is Medicine Coalition got legislation passed in June 2017 funding a 3 year $6 million pilot evaluating the benefits of medically-tailored meals for MediCal patients. This is the first and only pilot being done with multiple agencies across a state, and the only pilot being done directly in the MediCal system. The pilot focuses on patients with congestive heart failure because of the high cost of this diagnosis, and the strong relationship between diet and health outcomes. Maintaining a strict diet controlled for saturated fat and sodium can help patients manage their illness and symptoms, and prevent emergency department visits and hospitalizations.

Once we complete the pilot in 2021, an evaluation team will use data in the MediCal claims database to compare health care utilization and costs for the patients we served compared to a 4,000 person control group. With data demonstrating the cost effectiveness of the intervention, our goal is to make this benefit available to MediCal patients with congestive heart failure across the state. We also hope to expand the pilot work to a broader cross-section of MediCal patients with complex illnesses.

Kaiser Permanente Santa Rosa: Helping Congestive Heart Failure Patients Stay Healthy at Home

This formal research study was approved by Kaiser’s Internal Review Board in 2018. The goal is to determine whether medically-tailored meal support after discharge from the hospital can help patients stay healthy at home and avoid unnecessary hospitalizations. The evaluation will look at whether patients who receive the support have lower readmission rates than patients who do not. The study should complete by the end of 2019 with results in 2020. Our goal is to have Kaiser continue to invest in nutritional support for this patient population.

<table>
<thead>
<tr>
<th>Funder</th>
<th>Kaiser Permanente, Ceres Community Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>70 patients with congestive heart failure being discharged from the hospital</td>
</tr>
<tr>
<td>Intervention</td>
<td>14 heart healthy medically tailored meals a week for 8 weeks</td>
</tr>
</tbody>
</table>

Readmission Rates for CHF Patients on MediCal

<table>
<thead>
<tr>
<th>Current Statewide Rate</th>
<th>32.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients Completing Intervention (self-report data)</td>
<td>14.2%</td>
</tr>
</tbody>
</table>

I only eat what they give me, and so far I’ve been out of the hospital, I haven’t been retaining excess fluid, and I’ve been dropping weight. The food is amazing. When you’re eating healthy, you feel better. It really works!

~ Candace, client
Our Approach: Disrupting Health Care to Make Healthy Food a Reimbursable Medical Intervention

We know that food and nutrition insecurity is linked to poor health outcomes for millions of low-income Americans, and that many others develop chronic disease due in part to an unhealthy diet of processed food. Ceres Community Project is working at a local, state and national level to support the integration of healthy food and nutrition education into medical care, and to support the policy and systems changes that are needed to have that integration be sustainable and reimbursable.

Integrating food into health care as a medical intervention – prescribed by a doctor and paid for by health insurance – is one of the most powerful strategies we have for addressing the epidemic of chronic disease, spiraling health care costs and health equity.

Many changes are needed to have this integration work: health care organizations need ways to screen patients for social determinants like food insecurity, a place to record this information in the electronic health records, funding for staff members such as patient navigators and referral coordinators to manage the referral process, database systems to make referrals to community based organizations – including feedback loops to know whether or not a patient was enrolled in services, billing codes for those services, and sources of funding to pay for them. Through our medically tailored meal pilots and our work with the following coalitions, Ceres Community Project is helping build the foundation and practices needed to support this integration.

Hearts of Sonoma County

Building Clinical-Community Collaborations to Reduce Heart Disease

Ceres’ CEO Cathryn Couch is a member of the Leadership Team for this county-wide collaboration aimed at reducing heart attacks and strokes in Sonoma County. The membership includes all major health providers, the county Medicaid insurer, Department of Health staff, and other community based organizations. Thanks to Ceres’ leadership we’re developing a comprehensive approach to integrate nutrition education and food as medicine interventions into clinical care in order to improve cardiovascular health for county residents. Working through this coalition, Ceres has:

• Added Healthy Food Access & Nutrition Education as a core strategy on our Portfolio of Interventions to prevent heart attacks and strokes
• Developed the Sonoma County SmartBox intervention and led a pilot to evaluate its benefits
• Supported the adoption of the NorCal Resources system – a community database that allows health providers to refer patients for services, and know whether or not the person received them
• Worked with community health centers to address referral challenges so that more patients will receive the food support that can help them get well and stay well

Improving Health through Food and Nutrition Security

Marin Food Now aims to reduce food and nutrition insecurity among Marin County residents by better aligning and coordinating the work of more than a dozen nonprofit agencies. Supported by Marin Health & Human Services, the group includes Kaiser Permanente, Marin County Division of Aging, Marin Community Clinics, and nonprofits like Ceres Community Project who are working to provide food and meals in Marin. Working through this coalition, Ceres has:

• Formed a Home Delivered Food workgroup to address the food needs of people who are disabled or too sick to shop and cook
• Supported adoption of NorCal Resources (see Hearts of Sonoma County)
• Built a partnership with Marin Community Clinics to provide access to medically tailored meals for low-income patients with multiple chronic health conditions
Integration and Reimbursement for Medically Tailored Meals

Ceres’ CEO Cathryn Couch is the Vice-Chair for this statewide coalition of six medically tailored meal providers covering seven counties and 48% of the state’s population. CalFIMC supports integration of medically tailored meals into health care by proving the case through various pilots; educating health care organizations, insurers and legislators; and supporting a learning community who can work together to advance adoption of these services. CalFIMC is currently engaged in these efforts:

- Successful completion of the pilot California Congestive Heart Failure Nutrition Intervention, and adoption of this intervention as a standard benefit for patients across California
- Developing a plan to expand the Congestive Heart Failure Nutrition Intervention benefit to all 58 counties in California
- Developing standards for provision of medically tailored meals and exploring strategies for providing technical assistance and certification to grow the number of agencies in California who can provide medically tailored meals
- Building support for medically tailored meals among health providers and insurers through the pilot itself, an annual statewide convening, media coverage and presentations
- Developing other medically tailored meal pilots and contracts with private and public insurers
- Creating innovation hubs across the state to accelerate the integration of food as medicine into clinical care

The last patient I referred to Ceres was in the midst of treatment for Hepatitis C. She was severely fatigued, depressed and her white blood cell counts were dangerously low. Once she started receiving Ceres’ meals, she started to feel better and I was amazed when her labs showed a normalization of her white blood cell count. In the eight years that I’ve been treating Hepatitis C, I’d never seen such a dramatic improvement.

~ Fasih Hameed, MD

Educating Family Medicine Residents about Food and Health

In 2019, Ceres launched a five-year partnership with the Kaiser Permanente Family Medicine Residency Program. Each summer, residents completing their first year participate in a two-week experience at Ceres. Along with reading research studies about medically tailored meals and the importance of sustainable diets, each doctor volunteers on two shifts in one of our organic gardens, two shifts in one of our commercial kitchens, leads a “teen circle”, and delivers meals to a number of clients. The two weeks start with an overview of our work and the food is medicine movement, and wraps up with a debrief to talk about what they learned and how they can apply it in their practices going forward.
Given that Ceres and our licensed affiliates are the only 100% organic medically tailored meal providers in the country, we have a vital role to play in promoting the importance of organic and sustainable food systems to improve the health of people, communities and the planet.

Organic food provides more nutrition per serving, protects the health of food and farm workers, protects air and water quality, reduces pesticide burdens, and in many cases builds soil health, protects biodiversity and can help mitigate the effects of climate crisis. Despite all of these benefits – and growing demand for organic choices among consumers – organic makes up just 4% of agriculture in California, and for the most part is completely missing in the conversations about medically tailored meals or other food as medicine interventions. Here’s how we’re working to promote organic and sustainable food as essential in the food as medicine movement.

**Within Ceres**

- Ceres’ two organic gardens raise 7,000 pounds of organic produce annually and teach 430 youth a year about the importance of organic and sustainably raised food.
- We purchase $200,000 a year of organic products, including 70% sourced locally from northern California, directly benefitting dozens of producers and the local economy.
- Our meal program is certified at the highest level by EAT Real, recognizing our commitment to organic, sustainable, humane and fair-trade food sourcing and production.

**Collaborative Efforts**

- We partner with CCOF (California Certified Organic Farmers), the largest certifier of organic farms in the world, to promote organic agriculture:
  - At CCOF’s invitation, Ceres CEO Cathryn Couch spoke about “equity in organic food systems” at three major conferences in 2018 and 2019.
  - Ceres is supporting CCOF’s *Roadmap to an Organic California Benefits Report*, a comprehensive look at how increasing organic agriculture can support climate mitigation, health, environment and economic goals.
- Ceres promotes organic and sustainable food quality standards within all of the coalitions we’re part of (see Who We Partner With).
  - Since we joined the Food is Medicine Coalition in 2014, the share of member agencies using at least some organic food has risen from 36% to 73%, and the average share of organic has increased from 17% to 22%.
  - Marin Food Now – Ceres helped establish Healthy Food & Beverage Guidelines for the provision of emergency food in Marin County, including a statement about environmental nutrition and the importance of local and organic products.
- California Food & Farming Network – Ceres is a member of this 50+ agency coalition working to create a better food and farming system in California. The 2019 legislative agenda included several bills to support organic farmers and increase funding for organic and local foods in school lunches.

**Education and Promotion**

- **The Power of our Food Choices: How Organic & Sustainably Raised Foods Support Personal, Community & Environmental Health** – We published this White Paper in 2016 to educate our colleagues about how organic food choices are vital for health. The White Paper summarizes research about organic versus conventional agriculture, pasture-raised animal products versus factory farming, sugar and trans fats, and provides simple steps that food providers can take to improve the quality – and health benefits – of the food they source and serve.
- “Building Health Equity through your Food System Investments” – Ceres is partnering with CCOF and Health Care without Harm on a workshop for health care providers and insurers at the national Root Cause Coalition Conference in 2019 on the importance of an environmental nutrition approach for food as medicine investments.

...mounting scientific evidence has led experts to conclude that climate change presents “the biggest global health threat of the 21st century”. A recent study demonstrated that there are 467 different pathways by which human health, water, food, economy, infrastructure and security have already been impacted by climate hazards.
Who We Partner With

Policy and systems change work is a group effort. It’s only by working together – with our medically tailored meal colleagues, health care partners, and other aligned organizations – that we can accomplish any of these goals. Here’s who we are proud to work with:

Part of the Healthy Eating Active Living Initiative supported by the Marin Department of Health, this group works to reduce food insecurity and improve health by better connecting residents to appropriate food resources.

Marin Food Policy Council – brings together local food system stakeholders to improve health and sustainability by addressing issues connected to food production, access, distribution, and nutritional health.

Hearts of Sonoma County – part of Sonoma County Health Action and supported by Department of Health Services, this clinical community collaboration is working to reduce deaths from cardiovascular disease through shared learning and scaling strategies with the greatest impact.

The largest certifier of organic farms, CCOF is a leader in supporting organic agriculture. In 2019 they released Roadmap to an Organic California Benefits Report highlighting the broad spectrum of benefits from growing organic agriculture. Ceres is helping with them to promote this report and develop a policy platform.

FOOD IS MEDICINE COALITION

A national coalition of about two dozen medically tailored meal providers leading research efforts to prove the benefits of medically tailored meals, and advancing policy conversations at the state and national level to support reimbursement for medically tailored meals through public and private insurance.

A coalition of 65 health insurers, health care providers and community based organizations working to support the integration of social determinants of health, including food insecurity, into health care and develop strategies for support services to be reimbursed as a medical expense. Along with a year-round focus on research, education and advocacy, the group holds an annual national conference highlighting promising practices and pilots.

The largest certifier of organic farms, CCOF is a leader in supporting organic agriculture. In 2019 they released Roadmap to an Organic California Benefits Report highlighting the broad spectrum of benefits from growing organic agriculture. Ceres is helping with them to promote this report and develop a policy platform.

Ceres Community Project is committed to educating people about the link between food and health, and growing the community of support for policies and practices that support a healthy, just and sustainable world. Our own media outreach and stories about our work have reached 273 million people over the past four years.
About Ceres Community Project

Founded in 2007, Ceres Community Project began in a donated church kitchen with six teens providing meals for four families coping with serious illness, linking youth development to providing love, community support and nutritious meals to low-income families at a time of crucial need. As of mid-2019, Ceres’ youth and adult volunteers have assisted in growing 50,000+ pounds of organic produce and prepared 750,000 organic meals provided free or at low cost to nearly 5,000 families experiencing a health crisis.

Ceres’ innovative programs serving Marin and Sonoma counties include:

**Food as Medicine:** Ceres’ meals help our clients with serious illness by relieving stress, preventing malnutrition and connecting nourishing food to health. We use all organic foods, mostly local, to maximize their healing power and reduce exposure to toxins. Clients make significant improvements in diet and experience better health outcomes. We provide about 110,000 organic, whole food meals to 750 client families annually and are continuing to grow our capacity.

**Youth Empowerment:** Each year, about 430 youth volunteers, ages 14-22, raise organic produce and prepare medically tailored meals, learning how to grow, cook and eat healthy foods while gaining work-ready and leadership skills. Youth explore why their food choices matter to their health, as well as the health of their community and the earth. Youth involved in our program realize their power and ability to make a positive difference in the lives of others and for the planet, improve their eating habits, cook more often from scratch, and connect to careers.

**Community Nutrition Education:** We educate the broader community about the link between sustainably-produced healthy food, strong communities, and personal and environmental health through nutrition classes, our *Nourishing Connections Cookbook*, and other resources. In 2019 we’ll provide nearly 100 nutrition education classes through community health centers, local libraries and our own venues.

**National Affiliate Program:** Since 2010, Ceres has trained and inspired 14 communities across the country to replicate our model with 12 successfully operating today. Last year, we trained our first international partner organization from Denmark. All 12 follow the Ceres model of engaging young people as volunteer chefs who prepare nourishing meals made with organic, sustainably raised ingredients for clients facing a health crisis.

**Policy & Advocacy:** Ceres is committed to advocating for policies that support healthcare access and food as medicine, and that help build a regenerative food system that makes healthy, affordable organic food available for all. We work at the regional, state and national levels to advocate for access to organic, sustainably raised foods, and to have healthy food reimbursed through private and public health insurance. In 2019, Ceres is participating in three pilot research projects evaluating the impact of medically tailored meals on health outcomes and costs, including the groundbreaking 3-year pilot study funded by the State of California to evaluate the healthcare benefits of providing medically tailored meals to MediCal patients with congestive heart failure, a similar study with Kaiser Permanente Santa Rosa, and a community educational program addressing heart disease locally. We participate in 7 regional, state and national coalitions to advance these goals.

MISSION

*We create health for people, communities and the planet through love, healing food and empowering the next generation.*

![Our Program Funding](image)
References


6 FAO. Tackling Climate Change through Livestock: A global assessment of emissions and mitigation. 2013


11 California Food is Medicine Coalition. This information is based on early observations of patient self-reported data.

12 Food is Medicine Coalition. http://www.fimcoalition.org/our-model


Thank you all for the wonderful food, which frees me from a worry I had about how to get the kind of food I need to heal—organic and pure, plenty of nutrients. It also comes with a lot of love, which is also healing. I am so grateful to be included in this service.

~ Thea, client
We are grateful to the following funders for supporting our Policy & Advocacy Work

We are grateful to the following local elected officials for being champions of the California Congestive Heart Failure Nutrition Pilot

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Assembly Member Jim Wood
Assembly Member Marc Levine
Sonoma County Board of Supervisors

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