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Ecological Nutrition:
Redefining Healthy Food in Health Care

by
Kendra Christine Klein

A Dissertation Submitted in Partial Satisfaction of the
Requirements for the Degree of
Doctor of Philosophy
in
Environmental Science, Policy and Management
in the
Graduate Division
of the
University of California, Berkeley

Committee in Charge:
David Winickoff, Chair
Rachel Morello-Frosch
Richard Walker
Michael Pollan

Fall 2013

Ecological Nutrition:
Redefining Healthy Food in Health Care

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by

Kendra Christine Klein

Abstract

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Kendra Christine Klein

Doctor of Philosophy in Environmental Science, Policy and Management
University of California, Berkeley
Associate Professor David Winickoff, Chair

Within what can be called the *healthy food in health care* (HFHC) movement, a growing coalition of actors are leveraging scientific data on the environmental health impacts of the conventional, industrial food system to inspire and legitimize a range of health care initiatives aligned with alternative agrifood ideals. They are shifting the definition of food-related health from a *nutritionism* model, eating the right balance of nutrients and food groups, to what I call an *ecological nutrition* model, examining the public health impacts of social, economic, and environmental factors related to the entire agrifood system. This represents potentially powerful new alliances between alternative agrifood movements and health care institutions with deep pockets and cultural clout.

Using a commodity network approach, which combines evaluation of material and economic supply chain dynamics with analysis of the governing power of symbolic constructions of food, I explore social, political, and economic relationships shaping the HFHC movement with attention to scale, networks of power, meaning, and materiality. I analyze the significance of the HFHC movement from *farm to hospital* as it opens new markets for alternative foods and food system infrastructure, as well as from *hospital to farm* as a cadre of health experts find new interest in federal agrifood policy on issues including antibiotic use in livestock production, pesticides, and genetically modified organisms.

As hospitals within the HFHC movement attempt to move from ecological nutrition ideals to the institutionalization of alternative procurement practices, they are struggling to navigate the tensions between their new food commitments and their reliance on the efficiency, affordability, and standardization provided by the conventional, industrial food system. By providing empirical data and analysis on this *scale and values dilemma*, I shed light on the question of whether the alternative agrifood movement can effectively scale up to meet institutional demand without losing sight of the social, health, and environmental values that brought it into being.

I contribute to emerging fields of *farm to institution*, *agriculture of the middle*, and *values-based supply chain* theory and practice focused on mid-scale food system interventions. My work is the first to examine the opportunities and obstacles a set of powerful supply chain players called Group Purchasing Organizations pose to alternative agrifood movements. I also examine the successes and challenges of a specific HFHC project that seeks to leverage conventional regional food distributors in order to meet both the scale-based requirements and values-based goals of HFHC *farm to hospital* initiatives.

Finally, I contribute to and call for more scholarly conversations that engage with both the discursive and corporeal nature of human bodies. In an ecological nutrition discourse, human bodies are both flesh and metaphor - beset by a growing assemblage of health woes attributed to the dominant agrifood system, as well as the portal through which we begin to tell a different story about our relationship to agrifood practices and policies. Ultimately, in the HFHC movement, the body and its disease or well-being are at the center of serious contestations over the food system, right use of the landscape, and appropriate use of agrifood technologies. Speaking for diseased bodies, HFHC advocates can be understood as seeking to re-embed the food system within its ecological context through transformation of food commodity networks, public health and agricultural policies, and cultural notions of what constitutes healthy food.

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The seeds of this study were planted and tended over tea with Lena Brook. I am deeply grateful to her and to all of the organizers of the Health Care Without Harm *Healthy Food in Health Care Program* for their collaboration, continual inspiration, and reminders that this work matters far beyond the four walls of my office, including Lucia Sayre, Sapna Thottathil, Emma Sirois, Gretchen Miller, Kathy Pryor, Stacia Clinton, Michelle Gottlieb, and Louise Mitchell.

Finally, I made it to the doorstep of UC Berkeley and back out with a degree in hand only through the love and support of my family and for all they have done to foster my curiosity, confidence, and love of learning. Thank you.

Chapter 1

Introduction

Overview

Controversies related to the health and environmental impacts of the modern industrial food system are increasingly prevalent in Western societies. Pesticides, growth hormones, foodborne illness and genetically modified organisms are among the lightning rods of consumer skepticism and citizen outrage that are leading to ever more economic and ideological support for alternative models of food production, distribution, and consumption. Yet, for all their growing power and prominence, the diverse set of market and regulatory efforts that can be understood as comprising the *alternative agrifood movement* have barely begun to transform the food system. The market for organic food represents less than four percent of overall food and beverage sales (USDA 2013), and local food sales account for less than two percent of total farm gross (Barham et al. 2012). Farmers' markets have long been the darlings of the movement, but the goods exchanging hands at some 7,800 locations nationwide represent less than one percent of total U.S. agricultural production (Barham et al. 2012).

Beyond Farmers' Markets

The recent boom in farmers' markets and Community Supported Agriculture programs appears to have succeeded in increasing the number of small farmers in the United States (Kirschenmann et al. 2008), but alternative agrifood advocates are increasingly turning their attention to the intertwined plight of mid-size farmers and regional food aggregators, processors, and distributors. Academics and activists point to the fact that this so-called *agriculture of the middle* constitutes the most threatened set of entities in the agricultural sector due to the march of consolidation within the food system (Lyson, Stevenson and Welsh 2008). The missing middle ground of local and regional intermediaries that could connect small and mid-size farmers to regional markets has been identified as one of the main barriers to building a sustainable food system (Lyson et al. 2008, Stevenson and Pirog 2008, Barham et al. 2012).

Institutional purchasers like schools, colleges, and hospitals may be a crucial market for the agriculture of the middle (Lyson et al. 2008). They need a variety of differentiated farm products in significant quantities, and unlike farmers' markets, which purposefully seek to cut out the middleman, they rely on distributors and processors to help them deal with the logistical realities of feeding hundreds of people daily (Kirschenmann et al. 2008). "Farmers' markets are an important part of building local food systems," says James Barham, an agricultural economist at the USDA *Know Your Farmer, Know Your Food* program, "but more fundamental change will come from connecting small and mid-sized local farmers with institutional purchasers that are expressing ever more demand for sustainable food" (Barham 2011).

As a result of targeted campaigns, as well as the uptake of the alternative food zeitgeist by institutional foodservice directors and chefs, over the past decade thousands of schools, colleges, and hospitals across the country have begun to prioritize the procurement of sustainably-produced food and to align their definitions of healthy and good food with alternative agrifood movement principles. “Sustainable” and “alternative” in this context refer to the wide variety of food initiatives that institutions have undertaken in association with stated health, community, and environmental goals; they are used to distinguish new values-based procurement strategies from business-as-usual procurement.¹

The Farm to School Network reports involvement from 12,429 school districts across all fifty states (www.farmtoschool.org), the Real Food Challenge reports influencing \$48.5 million worth of college food spending on "local, fair, sustainable, and humane food" (www.realfoodchallenge.org), and over 460 hospitals have signed the Health Care Without Harm *Healthy Food in Health Care Pledge* (www.healthyfoodinhealthcare.org), while thirteen of the largest health systems in the country collaborated in the development of the Healthier Hospitals Initiative *Healthier Food Challenge* (www.healthierhospitals.org).

However, the leap in scale from an individual buying three onions at a farmers’ market to a hospital or school buying three hundred cases is not simply one of numbers; it presents an entirely different set of challenges, opportunities, and relationships. "Local, organic chicken was a real challenge" reports a hospital Food and Nutrition Services Director committed to alternative purchasing (Interview #38 2011). Under the current system, he can place an order on his food distributor’s website, and the next day hundreds of uniform 4-ounce chicken breasts show up on his loading dock, shrink-wrapped and stacked by the case. Procuring local, organic chicken first required weeks of working through bureaucratic purchasing and legal systems to set up a new vendor relationship. When the hospital finally received its first delivery, it was an ice-packed box of whole chickens with the heads and feet still on. “My cooks almost died,” the Director says. Having to chop off chicken heads is a far cry from lining up a row of boneless, skinless meat parts in the griller. Most institutional kitchens no longer have the equipment or staff with the knowledge necessary to deal with whole foods.

This is just the tip of the iceberg of challenges facing alternative purchasing efforts in institutions. The pallets of uniform poultry or meat parts that come through national distributors like Sysco and US Foods also help hospitals and schools to meet strict federal dietary guidelines, as each cut arrives within a fraction of the weight ordered. In contrast, locally-sourced chicken breasts, even if they arrive pre-processed, might come in a four to eight ounce range, forcing staff to slice and individually weigh servings. With tight budgets, paying staff to mete out perfect portions may not be time that a hospital foodservice department can afford. Along with set and limited budgets, logistical issues related to preparing and serving mass quantities of food

¹ Within the health care sector, the focus has been on local, third party certified products like *organic*, and products carrying federally-regulated label claims like *raised without the use of antibiotics*. For specific information about the sustainability criteria many hospitals use, see www.healthyfoodinhealthcare.org.

daily, and public policy related to food safety and nutrition, institutions like hospitals and schools require large and consistent product volumes, depend on efficiencies in ordering, delivery, and billing systems, and are deeply entrenched in food commodity networks dominated by powerful actors including national food distributors like US Foods and Sysco, corporate food manufacturers such as Tyson, Nestle, Kraft, and Dole, and foodservice contractors like Aramark and Sodexo.

When you're making soup for six hundred, changing your grocery list quickly gets complicated. The institutions emerging as the next frontier of the alternative agrifood movement are struggling to navigate the tensions between their new food goals and their reliance on the efficiency, affordability, and standardization provided by the conventional, industrial food system. The question remains: can the alternative agrifood movement scale up to meet institutional demand without losing sight of the social, health, and environmental values that brought it into being?

This dissertation provides empirical data and analysis on how this *scale and values dilemma* plays out on the ground in relation to alternative food purchasing efforts in the health care sector. I build on an emerging *farm to institution* literature focused on the role of K-12 schools and colleges in alternative agrifood movements (Clark, Inwood and Sharp 2011, Diamond and Barham 2011, Vogt and Kaiser 2008, Strohbehn and Gregoire 2003, Friedmann 2007, Feenstra et al. 2011). With the exception of an initial inquiry by Sachs and Feenstra (2008), my work is the first scholarship focused on alternative agrifood purchasing in the health care sector. My research is also the first to examine the opportunities and obstacles a set of powerful supply chain players called Group Purchasing Organizations pose to alternative agrifood movements.

My work examines the clashes, negotiations, and compromises that occur as hospitals within what can be called the *healthy food in health care* (HFHC) movement attempt to move from alternative agrifood ideals to institutionalization. The HFHC movement encompasses food procurement changes in hospitals, ideological efforts to redefine healthy food in ways that align with alternative agrifood ideals, and strategies to circulate and ensconce those definitions broadly within the health care sector and beyond.

Ostensibly, hospitals provide an opportunity to combine the market power of large-scale purchasing with the moral concerns of alternative consumers. Even small shifts in hospital purchasing may have meaningful impacts within the food system. A single hospital can have an annual food budget of \$1 to \$7 million or more (FSD 2011), while the health care sector as a whole spends approximately \$12 billion annually on food and beverages (Harvie 2006). Ideologically, the majority of hospitals in the United States are nonprofit, mission-driven organizations (www.AHA.org), and there is an underlying assumption within the sector that hospitals can and should act as advocates for positive change (e.g. AMA 2008).

Moreover, a growing body of scientific data on the health, social justice, and environmental impacts of the industrial food system lead to both moral and economic claims for the

involvement of the health care sector in food system change. As just one example, the health care sector treats the downstream health burden of agricultural pesticide use in the form of rising rates of cancers, neurodevelopmental and reproductive disorders, asthma, and Parkinson's (Sutton et al. 2011, Alavanja, Hoppin and Kamel 2004, Priyadarshi et al. 2000, Hoppin et al. 2008). HFHC actors point to the boomerang effect of agricultural practices that directly harm human health while undermining the ecosystem functions on which agricultural production depends (Harvie 2006). These systemic connections between public health and food production, processing, distribution, and consumption are being articulated within the HFHC movement by a growing coalition of doctors, nurses, dietitians, hospital chefs, foodservice directors, administrators, and nonprofit organizations. This *ecological nutrition* discourse adds a layer of cultural and political significance to the health care sector's alternative agrifood efforts not found in other farm to institution sectors.

Research Design

Research Questions

My research aims to understand structural and logistical issues of hospital food supply chains along with patterns of shifting norms and practices associated with HFHC redefinitions of healthy food. The following questions guided an examination of the scope of the HFHC movement, its ideological underpinnings and implications, and the supply chain challenges and opportunities confronted by hospitals and nonprofit organizations participating in the movement.

- a. What are the conceptual underpinnings of the HFHC movement?
 - What new healthy food ideals are being articulated within the movement?
 - What scientific evidence is being deployed in support of HFHC movement goals?
- b. What ideological and structural challenges do HFHC movement advocates face?
 - How do entrenched hospital supply chain relationships constrain or enable new initiatives?
 - What factors of institutional foodservice (e.g. budget, logistics) constrain new initiatives?
 - Are the prevention-based goals of the HFHC movement able to be integrated into health care institutions dominated by a fee-for-service model?
- c. What ideological and practical strategies are movement actors using to address these challenges?
 - How is "healthy food" discourse being leveraged to support changes in hospital foodservice?
 - What foodservice changes are necessary to achieve new food procurement goals?
 - Which health care actors beyond foodservice are engaged to create change (e.g., clinicians, administrators, and health professional associations)?

- d. To what extent do new health care institution procurement initiatives provide a way for alternative agrifood movements to scale up without undermining the values and goals that brought them into being?
- Do new hospital procurement strategies align with alternative agrifood movement goals?
 - Do they support the development of local and regional agrifood infrastructure?
 - What public policy changes are being pursued or supported by movement advocates?

In alignment with a participatory research approach, I collaborated with members of the HFHC movement in shaping a targeted set of research questions about Group Purchasing Organizations (GPOs). During the October 2010 national planning retreat of the Health Care Without Harm *Healthy Food in Health Care Program*, constituent nonprofit organizations identified the need for greater understanding of the role of GPOs in hospital food commodity networks in order to advance their work. GPOs act as gatekeepers to the health care market by negotiating contracts between hospitals and vendors. The following set of questions guided my inquiry on GPOs:

GPO Contract Basics

- What factors are at play when GPO contracts come up for renewal?
- Can hospitals reduce the percentage of food required to be purchased on contract?
- What role do rebates and other financial incentives play in motivating hospitals to remain on contract?
- What circumstances would motivate a hospital to change or decrease their contract?

Food Purchasing and GPOs

- Can food purchasing be negotiated separately from the larger hospital contract?
- Is having food under the GPO contract beneficial to hospitals? Why or why not?
- Are GPOs able to incorporate flexibility in sourcing, for example around seasonality of produce?
- Do GPOs understand what hospitals mean by *local* and *sustainable*? Are there language or communication barriers? Is greenwashing occurring?
- What factors contribute to hospital success in purchasing regional and sustainable food through their GPO contract?
- What factors contribute to hospital success in reducing the percentage of food required to be purchased on-contract?

Methods

This work is an interdisciplinary inquiry rooted in a participatory, action-oriented research approach. I used a mixed methods approach with a focus on qualitative data gathered through interviews, participant observation, and a case analysis of a place-based HFHC project.

Quantitative data were gathered through a survey of California hospitals participating in the HFHC movement.²

a. Semi-structured Interviews

Using a snowball sampling method, I conducted eighty semi-structured interviews with individuals representing various aspects of hospital food commodity networks: 36 interviews with hospital staff related to foodservice including foodservice directors, purchasing directors, executive chefs, and dieticians; 22 with non-governmental organizations working on alternative food procurement in the health care sector; 15 with supply chain intermediaries including GPOs, national broadline distributors, regional distributors, and alternative food hubs; 3 with state and national government agencies; and 4 with producers. Interviews represent the national scope of the movement, but were weighted toward the West Coast: 36 in California, 13 in Oregon/Washington, 19 in the Midwest, 7 on the East Coast, and 5 of national representatives.

- See Appendix A for the interview confidentiality agreement and interview guides

b. Participant observation

Three years of participant observation included internal conference calls, regional meetings, webinars, conferences, and monitoring two listervs generated by the Healthy Food in Health Care Program.

- See Appendix B for a list of venues and sources

c. Document analysis

Analysis included examination of the trade journals *Food Management* and *FoodService Director*; publications produced by hospitals, supply chain intermediaries, health professional associations, and NGOs; key organization and institution websites and materials; and white papers and gray literature.

d. Case Analysis

Along with inquiry on the HFHC movement nationally, achieved through interviews, participant observation, and document analysis, I conducted a case analysis of a place-based HFHC project in the San Francisco Bay Area. This region was the cradle of the HFHC movement and is home to a number of its frontrunner hospitals. The subject of the case analysis is the Farm Fresh Healthcare Project, a farm-to-hospital initiative in the San Francisco Bay Area that engages a set of hospitals' existing regional produce distributors to supply produce from local small and mid-size family farmers practicing environmentally-friendly production methods. The project noteworthy in terms of the level of collaboration occurring between multiple hospitals to achieve new food goals and because it aims to incorporate alternative agrifood values into existing

² This research is covered under Institutional Review Board Protocol ID: 2010-05-1467 of the Office for the Protection of Human Subjects at University of California, Berkeley.

supply chain relationships and infrastructure. The aim of my analysis was to detail emerging relationships between hospitals, local family farmers, and regional distributors as well as to examine health care institution and NGO strategies that support regional food system infrastructure and values-based supply chains.

e. Survey

Approximately a quarter of all hospitals engaged in Health Care Without Harm's *Healthy Food in Health Care Program* are in California, making it a useful location for understanding how HFHC ideals are being put into practice. In turn, the 127 California hospitals currently participating in the program represent a quarter of all hospitals in the state. I co-designed a California Healthy Food in Health Care survey in 2013 with Sapna Thottathil, a colleague at San Francisco Bay Area Physicians for Social Responsibility. We administered the survey online via Survey Monkey. During June-July 2013, I emailed announcements to all 112 California facilities engaged in the program at that time. We achieved a 75.8% response rate with 85 facilities responding. Responding facilities ranged in size from 25 to over 1,000 beds with three-quarters serving urban communities.

The survey was not meant to be broadly representative of the health care sector; it was a measurement of work self-reported by hospitals engaged at some level in the Healthy Food in Health Care Program, either by signing the Healthy Food in Health Care Pledge, signing the Healthier Hospitals Initiative Healthier Food Challenge, or by using the tools provided by the Healthy Food in Health Care Program in their facilities. Not all questions were answered by all respondents. We designed the survey to utilize skip logic to allow respondents who answered "no" or "don't know" to skip follow-up questions intended for those that said "yes." In a few cases, respondents used their own skip logic. Questions covered HFHC initiatives undertaken, strategies used to accomplish them, and whether and how educational outreach to patients, staff, and visitors on HFHC initiatives has been undertaken.

- See Appendix C for the survey instrument and a list of responding hospitals

f. Collaborative research approach

My research is rooted in theories of participatory, action-oriented research which maintain that social science research can and should be conducted collaboratively with local stakeholders with the goal of facilitating social change (Greenwood and Levin 2007, Minkler and Wallerstein 2003). Using Cornwall and Jewkes (1995) framework, my work would best be described as *collaborative*, in that I worked with a set of nonprofit organizations on research that I designed, initiated, and managed.

I chose to use the term *healthy food in health care* (HFHC) to describe this phenomenon in keeping with the national Healthy Food in Health Care Program of Health Care Without Harm. Seven organizations in various regions of the U.S. are coordinated under the umbrella of this

program.³ They have taken the lead in developing and disseminating the alternative healthy food discourse of the HFHC movement and in creating tools and resources to help hospitals transform their food procurement policies and practices.

During the beginning phases of my research, I approached one of the organizations leading the HFHC movement, San Francisco Bay Area Physicians for Social Responsibility (SF PSR), with the possibility of collaboration. Since then, I have been directly engaged with the work of Health Care Without Harm through SF PSR. I was hired as an independent consultant and then Senior Program Associate at SF PSR in 2011 and 2013, respectively.

Feminist and participatory research theory provided me with important tools to guide a reflexive relationship to my in-depth involvement in the subject of my research. My approach to the project of knowledge production aligns with those theorists who maintain that research is always a context-dependent, socially-constructed process in which the researcher is not a neutral observer but an engaged participant (Greenwood and Levin 2007, Haraway 1988, Latour and Woolgar 1979). My commitment has been to an accurate, detailed account of the arena of the HFHC movement from a grounded perspective, or what Haraway calls *situated knowledge* (Haraway 1988). Bias does not mean blindness. I have both sympathy for the underlying social, environmental, and health goals of the HFHC movement and a willingness to ask hard questions and to critique shortcomings.

Aligned with participatory research ideals - which aim to co-generate knowledge with communities for the benefit of those communities and to disrupt the typically extractive knowledge-production relationship between researchers and their subjects (Greenwood and Levin 2007) - I prioritized sharing the results of my research with the HFHC movement and the public in accessible formats. I produced a white paper on Group Purchasing Organizations for hospital foodservice directors and movement advocates (Klein 2012b), I published an article on my research for a public audience in *The Nation* (Klein 2012a), and I co-authored an editorial for a medical journal aimed at doctors and other clinicians (see Chapter 4).

Theoretical approach

In setting out to understand the social, political, and economic dynamics of the HFHC movement, I was guided by a *commodity network* approach. Traditional supply chain or commodity chain studies focus on material and economic factors in the sphere of production and the governing power of key firms. A commodity network approach allowed me to combine supply chain analysis with an actor-network approach incorporating an examination of a broader set of players and of the network-governing power of cultural and symbolic constructions of food (Dixon 1999, Murdoch, Marsden and Banks 2000, Raynolds 2004, Marsden, Banks and Bristow 2000). I take an interdisciplinary approach, drawing on economic and cultural geography, science & technology studies, food studies, political ecology, and social movement literatures to

³ Physicians for Social Responsibility (San Francisco, Boston, Oregon, Washington), the Ecology Center (MI), Maryland Hospitals for a Healthy Environment (MD), and Common Market (PA).

analyze how new relationships are being negotiated, debated, and institutionalized within health care commodity networks and to elucidate the ordering power of healthy food discourses within those networks.

My work contributes to and calls for more scholarly conversations that engage with both the discursive and corporeal nature of human bodies. The act of producing and consuming food is one of the most palpable examples of our metabolic enmeshment in more-than-human nature, our very cells are constituted by the food we ingest.⁴ Yet there is little precedent for engaging with this material reality within social science. I draw on a handful of food studies scholars who engage with food as both laden with cultural meaning and as the material basis of our survival (Goodman 1999, FitzSimmons and Goodman 1998, Guthman and DuPuis 2006). I also draw on literature that engages with human bodies as both material and semiotic in the fields of health geography (Hall 2000, Dorn and Laws 1994, Moss and Dyck 1999) and feminist studies (Alaimo and Hekman 2008, Hayles 1999, Haraway 1991).

Dissertation Outline

My work explores the significance of the HFHC movement from *farm to hospital* as it opens new markets for alternative foods and food system infrastructure and from *hospital to farm* as a cadre of doctors, dietitians and other health experts find new interest in federal agrifood policy on issues including antibiotic use in livestock production, pesticides, and genetically modified organisms. I chose a “three papers” format in which two chapters of background analysis are followed by three chapters written as publishable papers.

The second and third chapters detail the scope of the HFHC movement and explicate the reconceptualization of healthy food within the movement as what I call an *ecological nutrition* discourse that places the health of human bodies and societies within the context of the ecosystems of which we are a part. In contrast to the dominant nutrition science approach focused narrowly on the biochemistry of food, an ecological nutrition approach examines the public health impacts of social, economic, and environmental factors related to the entire agrifood system, thereby shifting responsibility for food-related health from individuals to the collective political body and to the political economic institutions that shape the food system. I demonstrate how the uptake of an ecological nutrition discourse within the health care sector represents powerful new alliances between the alternative agrifood movement and health care institutions with deep pockets and cultural clout.

The HFHC movement can be seen as radicalizing a set of health professionals in its shift from a biomedical to an ecological approach to health and illness. The fourth chapter includes analysis of the role of health professionals in the HFHC movement and a co-authored editorial on a specific ecological nutrition issue, *Antibiotic Overuse in Animal Agriculture: The Scientific and Policy Landscape*. The editorial is written with a health professional audience in mind and

⁴ Echoing Gary Nabhan who states that “our very cells are constituted from the place we love the most”, making it difficult to identify where ‘the self’ ends and the outside begins. (Quoted in Delind 2006, p. 135)

demonstrates the type of policy prescription occurring in the HFHC movement. As hospitals within the HFHC movement attempt to move from ecological nutrition ideals to the institutionalization of alternative procurement practices in their foodservice departments, deep tensions are revealed between new food commitments rooted in social, health, and environmental values and hospitals' reliance on the standardized, low-cost products delivered dependably day in and day out by the conventional, industrial food system. The fifth and sixth chapters are journal articles that provide empirical data on how this scale and values dilemma plays out on the ground and analysis of the extent to which the alternative agrifood movement can expand to meet institutional demand while maintaining the values and principles that brought it into being. These chapters examine the complex ways HFHC ideals are meeting practice from two different angles.

First, *Gatekeepers and Good Food: Group Purchasing Organizations and Alternative Food Procurement in Hospitals* takes a top-down look at the power of major national companies called Group Purchasing Organizations (GPOs) to govern hospital food supply chains. GPOs act as gatekeepers between hospitals and nearly all of the vendors they buy from. They have been identified as among the most powerful players in hospital supply chains (Sethi 2009). My analysis finds that efforts to source food that embodies health, social, and environmental values through GPO-governed supply chains come up against a number of structural and economic barriers that challenge alternative agrifood initiatives. However, the paper also reports on hospital supply chain innovations that demonstrate points of flexibility in health care food commodity networks and the potential for hospitals to create purchasing and informational alliances around common food goals in order to create new, values-based commodity network relationships both within and beyond GPO procurement channels.

I then take a bottom-up look at a specific HFHC project attempting to meet a set of San Francisco Bay Area hospitals' local food goals by engaging conventional regional produce distributors. *The Farm Fresh Healthcare Project: Analysis of a Hybrid Values-based Supply Chain* provides an in-depth case analysis of an attempt to solve the problem of the missing middle ground of intermediaries that can connect local small and mid-size farmers with institutional purchasers. An emerging *values-based supply chain* literature addressing this question has largely been derived from cases of farmer cooperatives, food hubs, and food distributors that have purposefully designed their operations to incorporate alternative agrifood movement goals and values (Bloom and Hinrichs 2011). In contrast, this paper examines a local food system network that employs distributors that did not originate in the alternative agrifood movement. The central question is to what extent these conventional supply chain intermediaries can be leveraged to incorporate alternative agrifood values into their practices such as supply chain transparency, mutual benefit between supply chain members, environmental stewardship, and social equity. This study finds that the Farm Fresh Healthcare Project succeeded to some degree in these goals, but it raises questions about the long-term viability and replicability of this type of project given its dependence on nonprofit partners external to the supply chain and its reliance on a small set of foodservice champions within participating hospitals willing to take on additional responsibilities and costs associated with the project.

Part 1

REDEFINING HEALTHY FOOD IN HEALTH CARE

Chapter 2

The Healthy Food in Health Care Movement

Riding the wave of health care's mounting concern about diet-related diseases like obesity and diabetes, and helped along by the growing conception that health care should not only treat sickness but should prevent disease and preserve wellness (APHA 2012), a coalition of nonprofit organizations leading the HFHC movement are finding that hundreds of hospitals and clinicians are receptive to redefining healthy food in ways that align with alternative agrifood ideals.

That some responsibility for creating a healthier food system should fall to health care institutions with a great deal of economic power, cultural authority, and a mission to safeguard human health makes sense on a basic level. Nonetheless, it is interesting that HFHC initiatives are being taken up by hospitals given the continued dominance of the biomedical model (the converse of the type of structural and systemic changes advocated by a HFHC approach), and the fact that establishing the connection between diet and health remains a challenge in the health care sector, let alone arguments for broader, systemic analyses (AAFP 2010). In addition, while participating systems like Kaiser Permanente have an economic motivation to support prevention-based approaches, since they both insure and provide medical care for their members, most hospitals make money from “heads in beds,” meaning that their economic incentives run counter to any type of preventative action.

The fact that the movement continues to grow at a rapid pace can be attributed to a number of factors discussed below, ranging from the status of foodservice departments within hospital facilities to ideological trends toward prevention-based care within the health care sector. The profound vision of food system change championed by leading members of the HFHC movement, however, is taken up and enacted unevenly throughout the health care sector.

Healthy Bodies Begin with Healthy Soil

Advocates of alternative agrifood movements have been connecting the dots linking agricultural technologies, practices, and policies to public health for decades. As the pioneers of the ecological farming movement asserted, healthy bodies begin with healthy soil (Balfour 1943). Since initial outcry around DDT in the 1960s, the organic agriculture and anti-toxics movements have traced pesticide use to birth defects, asthma, neurodevelopmental and reproductive disorders, and various cancers (Carson 1962, Lockeretz 2007). Working their way back along the food chain, they have identified the drivers of industrial agriculture's intensive pesticide use, including public policy aimed at high production of commodity crops, the political power of chemical corporations, and the shortcomings of the U.S. risk assessment model of toxics

regulation (Wargo 1998, Weir and Schapiro 1981). That these formerly fringe ideas are now being articulated in mainstream health care institutions potentially signals the coming of age of the alternative agrifood movement.

HFHC advocates cite a growing body of scientific evidence linking the modern, industrial food system to human health impacts, social justice concerns, and environmental degradation that undermines the clean air and water and healthy soil on which human well-being ultimately depend (Schettler 2004, Harvie 2006). They argue that pesticides destroy soil biota and wildlife while contributing to rising rates of cancer, neurodevelopmental and reproductive disorders (Sutton et al. 2011); synthetic fertilizers lead to nutrient-poor soils and an 8,500 square mile hypoxic dead zone in the Gulf of Mexico (Diaz and Rosenberg 2008) while contributing to *blue baby syndrome* (Majumdar 2003); manure lagoons at Confined Animal Feeding Operations (CAFOs) leach pollutants including phosphorus, heavy metals and ammonia while providing ideal habitat for foodborne pathogens and creating noxious, asthma-inducing odors (Thorne 2007); routine non-therapeutic use of antibiotics in livestock production allow for overcrowded living conditions while leading to antibiotic-resistant bacteria such as methicillin-resistant *Staphylococcus aureus* (MRSA) (Gilchrist et al. 2007); and food production and shipping account for high greenhouse gas emissions, accelerating feedback loops with resultant negative impacts on food production, human health, and ecosystem resilience (Pfeiffer 2006, Horrigan, Lawrence and Walker 2002).

These impacts disproportionately affect the health of workers, rural communities, and low income communities of color. Agricultural workers are at higher risk for pesticide-related illnesses including cancers, neurodevelopmental and reproductive disorders, and acute poisoning (Das et al. 2001, Eskenazi et al. 2007, Calvert et al. 2008); workers in CAFOs suffer respiratory problems and exposure to antibiotic-resistant bacteria (Silbergeld et al. 2008a, Heederik et al. 2007); slaughterhouse workers are at higher risk for bacterial and viral infections, respiratory problems, and physical injury (Schlosser 2001, Veien 2012); rural communities experience illness due to air and water contamination from pesticides and CAFO emissions (Gibbs et al. 2006, Silbergeld, Graham and Price 2008b, Harrison 2011, Thu 2002); and spatial patterning of food availability creates obesogenic environments in low income communities (White 2007).

From this perspective, the health care sector is bearing the economic burden of treating the downstream effects of what HFHC advocates refer to as a “broken” food system (www.healthyfoodaction.org). They are leveraging this data to inspire and legitimize new health care food procurement initiatives aligned with alternative agrifood goals. In putting their ideals into action, hospitals are seeking out food that is local, organic, fair trade, whole rather than processed, produced by family farmers, and free of a host of agricultural technologies such as antibiotics, growth hormones, and genetic modification (Harvie 2006, Sachs and Feenstra 2008, Sirois, Pryor and Thottathil 2013).

Discursive Nodes of the HFHC Movement

Since 2003, the HFHC movement has grown from a handful of leading hospitals to a broad-based national movement, thanks in large part to the concerted efforts of a set of nonprofit organizations. Many of these organizations are united under the umbrella of the Health Care Without Harm *Healthy Food in Health Care Program* which aims to “harness the purchasing power and expertise of the health care sector to advance the development of a sustainable food system” (www.healthyfoodinhealthcare.org).⁵ Two other organizations, Practice Greenhealth and Healthy Food Action also play key roles in the movement.

Over 460 hospitals and health systems have signed onto Health Care Without Harm’s *Healthy Food in Health Care Pledge* since 2005, which states 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” (HCWH online-e). This framing has spread dramatically within the health care sector. It has been endorsed in policy statements issued by the American Medical Association, American Public Health Association, and American Nurses Association, among others, and it forms the basis of the *Healthy Food Challenge* of the Healthier Hospitals Initiative developed in 2011 by thirteen of the most influential health systems in the country (HHI online). The hundreds of hospitals participating in the *Healthy Food in Health Care Pledge* and the *Healthy Food Challenge* represent approximately ten percent of the nation’s over 5,000 hospitals (www.AHA.org).

Like other contemporary advocacy networks, key functions of the nonprofit organizations leading the HFHC movement have been the development of movement norms, leveraging data and information to create change, and information exchange between diverse networks (Keck and Sikkink 1998). Despite the variety of interests that may motivate a given hospital foodservice director, administrator, or clinician to participate in HFHC initiatives, actions nationwide typically align since definitions and materials are ready and waiting for them through the efforts of these organizations. The Healthy Food Action and Healthy Food in Health Care Programs have both generated a significant body of reports, webinars and other educational materials on issues at the junction of public health and the food system, such as use of antibiotics, arsenic and growth hormones in livestock production, toxics in food and food packaging, agricultural pesticides, and agricultural subsidies. The *Healthy Food in Health Care Program* provides definitions of “healthier” food, criteria and how-to guides for achieving healthier and sustainable hospital foodservice, and data collection tools that form the basis of a national awards program for hospitals and foodservice professionals. The Health Care Without Harm coalition also offers technical assistance and networking opportunities through roundtables, conference calls, listservs, webinars and national FoodMed conferences. In the course of my research, I found that even hospitals that were not directly participating in the *Healthy Food in Health Care Program* often relied on Health Care Without Harm reports, how-

⁵ Participating organizations include: Physicians for Social Responsibility (San Francisco, Boston, Oregon, Washington), the Ecology Center (MI), Maryland Hospitals for a Healthy Environment (MD), and Common Market (PA).

to-guides, and factsheets to implement their own HFHC efforts, demonstrating the important role of these organizations' efforts to generate and circulate information.

Another foundational discursive node can be found within the American Academy of Nutrition and Dietetics. There, the Hunger and Environmental Nutrition (HEN) Dietetics Practice Group represents a subset of professional dietitians who have dramatically reconceptualized the relationship between food and health through a food system framework. HEN's mission is to examine "the interconnectedness among individual, political, and institutional factors that govern how people produce, procure, and consume food and the implications for nutrition and health" (HEN online). This approach is perceived as radical within the field of dietetics and the larger Academy (Personal communication 2012)

Two founding members of HEN, Joan Dye Gussow and Kate Clancy, were articulating this approach as early as the 1980s. In their landmark piece, *Dietary Guidelines for Sustainability* (1986), they make the case that nutrition education should include the effects of food choices on food supply, on agricultural, economic and natural resources, and on the long-term stability of the food system. More recently, HEN served as a locus of HFHC norm circulation by dedicating the December 2009 issue of their publication, the *Journal of Hunger and Environmental Nutrition*, to connections between food systems and public health. HEN plays a key role in the HFHC movement since many hospital foodservice directors are dietitians by training. In turn, HEN members include hospital-based dietitians who are leading the movement by creating change within their facilities.

All of these nodes of the HFHC movement intersect. As just one example, Lisa McDowell is the Chief Clinical Dietitian at St. Joseph Mercy Hospital of Ann Arbor, Michigan, a facility looked to for its innovative sustainable food efforts. McDowell is an active HEN member and is also connected with the Ecology Center, a Health Care Without Harm organization facilitating hospital efforts in Michigan. In 2011, McDowell won the Healthy Food in Health Care Clinical Engagement Award at the national FoodMed conference hosted by Health Care Without Harm. In a statement echoing one of the trailblazers of the organic farming movement,⁶ she captures the connections between nutrition and alternative food movement ideals now being institutionalized within the health care sector, asserting that:

Healthy soil grows healthy food, which feeds people to be healthy, which makes healthy communities. You can't have a healthy community without starting with the soil. (Interview #60 2011)

The motivations driving foodservice change within hospitals do not always align with the complex HFHC discourse articulated by the key nonprofit organizations. For example, surveys of institutional foodservice directors participating in local purchasing projects have found that

⁶ Lady Eve Balfour, founder of the UK Soil Association is credited with the concept that the health of people begins with the health of the soil (Balfour 1943). See also (Howard 1943).

taste and *quality* are the top two motivations cited for prioritizing local foods, with *supporting local economies* in third place (Feenstra et al. 2011, Bagdonis, Hinrichs and Schafft 2009, Vogt and Kaiser 2008). In interviews I conducted, foodservice directors, who are often chefs or dietitians by training, express a variety of reasons for undertaking HFHC initiatives, ranging from ideological arguments that "it's the right thing to do" to culinary claims, for example that fresh, local food tastes better. Yet hospitals tend to undertake the same set of actions despite divergent motivations and reasoning, largely because of the strong role of Health Care Without Harm in generating healthy food criteria and defining a given set of actions to achieve healthier food procurement.

Emergence

While HFHC concepts have been honed and propagated by leading nonprofit organizations, they emerged from broader social movements, including alternative agrifood and environmental health movements, and they were being articulated by leading hospitals and health systems before the Healthy Food in Health Care Program came into being. Some of the first HFHC activity can be attributed to two major health systems based on the West Coast, Kaiser Permanente and Dignity Health.

In 2006, Kaiser Permanente, the largest HMO in the nation, issued a *Comprehensive Food Policy* which committed the health system to providing healthier food in a manner that "promotes agricultural practices that are ecologically sound, economically viable, and socially responsible" (2006). In the same year, Dignity Health authored a *Food and Nutrition Vision Statement* asserting that:

Dignity Health recognizes that food production and distribution systems have wide ranging impacts on the quality of ecosystems and their communities, and so; Dignity Health recognizes that healthy food is defined not only by nutritional quality, but equally by a food system which is economically viable, environmentally sustainable and which supports human dignity and justice. (Burdullis 2011)

Both vision statements call on the special role of health care institutions to protect and promote individual and community health. They include commitments to procure local food in order to support family farmers and farmworker justice and to purchase food produced without pesticides, synthetic hormones, and unnecessary use of antibiotics. In 2009, Dignity Health also announced a policy against the purchase of genetically modified organisms.

The impetus for Kaiser Permanente's sustainable food work is often traced to Dr. Preston Maring, an obstetrician and gynecologist by training, who has served in a variety of administrative roles at Kaiser headquarters in Oakland, California. Maring started what he believes to be the first hospital farmers' market in 2003 at the Oakland East Bay Medical Center. Largely motivated by his own convictions about the centrality of eating well to overall health,

Maring found a supportive environment in Kaiser's *total health* model rooted in a preventative care approach. After his success with the farmers' market, Maring turned to hospital food procurement, initiating an effort to source from local family farmers through a collaboration with the nonprofit organization Community Alliance with Family Farmers. In his current position as Medical Director of Outside Services, Maring continues to expand Kaiser's healthy food efforts. Kaiser now boasts fifty-two farmers' markets at facilities in multiple states and employs a full time Sustainable Food System Manager at its headquarters.

At Dignity Health, a focus on sustainable food is similarly framed as aligning with the organization's core values. Dignity Health calls on its faith-based mission of healing in relationship to the environment, stating that, "As health care providers, we recognize the interdependence between human health and our environment and believe in the caring stewardship of a renewable Earth for the enhancement of all life" (Dignity Health online). Dignity Health puts this vision into action not only through HFHC initiatives, but through efforts to conserve water and energy, remove toxics in the hospital environment, promote green building, and measure and report greenhouse gas emissions as a signatory to the California Climate Action Registry.

Meanwhile, a set of nonprofit organizations had begun discussing the connections between environment, food, and health care as an expansion of their core interests. In 2002, the Science and Environmental Health Network detailed a new vision for *ecological medicine* and soon after called on health care institutions to take a leadership role in promoting a more sustainable food system (Schettler 2002, Schettler 2004). Likewise, Healthy Food Action created a platform to engage health professionals in food and agriculture-related public policy to "make health the future of food and farming" (www.healthyfoodaction.org).

In 2005, Health Care Without Harm, an organization that had long worked on environmental health issues within the health care sector, expanded the scope of its work to include food by launching the Healthy Food in Health Care Program. Health Care Without Harm was founded in 1996 with the goal of addressing medical waste incineration as the leading source of dioxin, a potent carcinogen, in the environment. It is now an international coalition representing 430 organizations in 52 countries that seek to hold hospitals and health care systems to the Hippocratic oath to *first, do no harm* by changing health care practices that pollute the environment and contribute to disease.

Health Care Without Harm brings an environmental health perspective to their food work, drawing connections between hospital practices and the broader environment. They argue that an ecological approach is "important for health care food decision-making because the production and distribution of food has a multitude of health-related impacts often removed from the immediate hospital environment" (HCWH online-b). In their framing, healthy food comes from food systems that maintain ecosystem health; have minimal negative impact on the environment; encourage local production and distribution infrastructures; make nutritious food

available, accessible, and affordable to all; and protect farmers and farmworkers (HCWH online-d).

The Movement Comes Together

The HFHC movement was inaugurated at the FoodMed Conference in 2005 held in Oakland, California. Health Care Without Harm and one of its constituent organizations, San Francisco Bay Area Physicians for Social Responsibility, brought together people from sustainable agriculture, environmental health, public health, and the health care sector to begin talking about how to bring “healthier” food into health care in a way that would mutually benefit everyone along the food chain and contribute to healthier communities and ecosystems (Harvie, Mikkelsen and Shak 2009, Harvie, Moore and Brook 2008).

The rapid expansion of HFHC efforts across the country after the first FoodMed conference can largely be attributed to the above-mentioned set of nonprofit organizations which partnered on various projects and aligned their efforts around the same goals, framing problems and solutions similarly. The organizations working under Health Care Without Harm also targeted health professional associations as important locations to establish an alternative healthy food discourse within the health care community. Through their efforts, statements on food and sustainability that echo the frontrunner health systems and the Healthy Food in Health Care Pledge have been issued by the American Medical Association, American Public Health Association, American Nurses Association, American Academy of Nutrition and Dietetics, California Medical Association, and Minnesota Academy of Family Physicians, among others.

More recently, state hospital associations have begun to endorse HFHC initiatives. For example, the Michigan Hospital Association launched a Healthy Food Hospitals campaign in 2010 encouraging Michigan hospitals to become models of “exemplary foodservice choices and nutritional selections.” Step four of the program states that “healthy eating starts with a healthy food system” and encourages hospitals to increase their procurement of local foods (www.healthyfoodhospitals.org). The Ecology Center, a Health Care Without Harm organization in Michigan, took a lead role in ensuring the Healthy Food Hospitals campaign went beyond a traditional nutrition approach.

In 2012, the launch of the Healthier Hospitals Initiative (HHI) signaled an even broader uptake of HFHC ideals. The HHI is a collaboration between thirteen of the largest U.S. health systems and three NGOs, Health Care Without Harm, Practice Greenhealth, and the Center for Health Design. At the outset, it represented 490 hospitals with more than \$20 billion in annual purchasing power. One of the six HHI sustainability planks is a *Healthier Food Challenge* which calls on hospitals to use their “purchasing power and mission of healing” to procure “environmentally-sustainable and healthier foods” that counter “current methods of food production, processing, packaging and distribution [that] negatively impact human health and the environment” (HHI online). To date, 250 hospitals have signed on.

The movement is also led by individual champions within hospitals. One or two individuals with authority in the foodservice department who have ideological commitments to HFHC goals can be responsible for a hospital's engagement, even without broader buy-in from the hospital or health system. As some foodservice directors report, their department is perceived as more in line with hospitality and janitorial services than with the hospital's central goals of treatment and health provision, since food and diet are not central concerns under the dominant biomedical model. Therefore, as long as a foodservice director remains within budget, changes within the department are not typically on the radar screen of hospital administrators.

HFHC Practices in Hospitals

Hospitals are undertaking a wide range of activities motivated by their HFHC ideals, including procurement changes for patient meals and cafeterias, hosting farmers' markets and Community Supported Agriculture Programs, creating hospital gardens and farms, educating supply chain intermediaries about their new preferences, and educating patients, visitors, and communities about their alternative agrifood goals. HFHC efforts often occur in tandem with broader sustainability and wellness goals and may be driven not only by foodservice leaders but by hospital Green Teams and Wellness Committees.

Approximately a quarter of all hospitals engaged in Health Care Without Harm's *Healthy Food in Health Care Program* are in California,⁷ making it a useful location for understanding how HFHC ideals are being put into practice. In turn, the 127 California hospitals currently participating in the program represent a quarter of all hospitals in the state.

The data below are based on a survey I co-designed with a colleague at SF PSR. Eighty-five California HFHC facilities responded out of 112 that were engaged in the program at the time of the survey (June-July 2013). The survey was not meant to be broadly representative of the health care sector as a whole; rather, it gathered data on facilities formally participating in HFHC efforts either through signing the Health Care Without Harm *Healthy Food in Health Care Pledge* or the Healthier Hospitals Initiative *Healthier Food Challenge* which places the sustainable food framework of the Pledge within a broader sustainability agenda for the health care sector. Not all facilities answered all questions; the total number of question respondents are noted in each section below.

1. Defining survey criteria

The survey was based on Healthy Food in Health Care Program definitions of local and sustainable food given that those are the definitions participating hospitals use to generate criteria and goals for their HFHC efforts. To define sustainable food, the program relies on third

⁷ The hundreds of hospitals participating in the *Healthy Food in Health Care Pledge* and the *Healthy Food Challenge* represent approximately ten percent of the nation's over 5,000 hospitals (www.AHA.org). For a list of hospitals signatories to the Healthy Food in Health Care Pledge, see <http://www.healthyfoodinhealthcare.org/pledge.php>; for a list of hospital signatories to the Healthier Hospitals Initiative Healthier Food Challenge see <http://healthierhospitals.org/about-hhi/participating-hospitals>.

party certified products like *organic* and products carrying federally-regulated label claims like *raised without the use of antibiotics*. The program defines local as food that is grown or produced on farms or ranches within a 250 mile radius of a facility. For processed foods and foods with multiple ingredients, greater than 50 percent of the ingredients, by weight, must be grown and processed within a 250 mile radius of our facility. (For specific information about the sustainability criteria, see www.healthyfoodinhealthcare.org.) Regional HFHC initiatives often develop more nuanced definitions of local and sustainable; for more details see chapters five and six.

2. Food procurement for patient meals and cafeterias

Ninety-one percent of survey respondents report purchasing some local and/or sustainable food. For those that reported purchasing data, 22 facilities spent a combined total of \$3,582,924 on local and/or sustainable food and beverages in 2012. A 2012 trade journal survey of hospital foodservice directors demonstrates that these trends are sector-wide; of fifty hospitals surveyed, 30 percent reported purchasing some organic products in the previous year, and all reported purchasing local foods (FSD 2012).

<i>California HFHC Purchasing: Third-party certifications</i>	<i>Percent of facilities N = 85</i>
USDA Certified Organic	62%
Certified Humane Raised and Handled	52%
Fair Trade	35%
Food Alliance	34%
Rainforest Alliance	10.5%
Non-GMO Project Verified	8%
Marine Stewardship Council	7%
Salmon Safe	6%
Animal Welfare Approved	5%
Protected Harvest	3.5%
American Grass-fed	2%
None	6%

<i>California HFHC Purchasing: Federally-Regulated Label Claims</i>	<i>Percent of facilities N = 85</i>
rBGHfree/rBSTfree	73%
Cage-free eggs	48%
Raised without antibiotics/No antibiotics administered	48%
Raised without added hormones/No hormones added	41%
USDA Grass-fed	7%
No genetically engineered ingredients	3.5%
None	6%

3. Food procurement pathways

Demonstrating hospitals' reliance on supply chain intermediaries like distributors and processors, the vast majority of HFHC procurement is coming through mediated supply chains. (For a discussion of obstacles and opportunities conventional supply chain intermediaries pose to HFHC efforts, see chapters five and six.)

<i>Sourcing pathways for California HFHC purchasing</i>	<i>Percent of facilities N = 85</i>
Via local/regional produce distributor	81%
Via broadline distributor (e.g. US Foods or Sysco)	70.5%
Via local/regional dairy distributor	26%
From a local, independent company (e.g. a local bakery)	20%
Via local/regional meat and seafood distributor	19%
Directly from farms/ranches	8%
Via farmer cooperatives/local food hubs	5%

Given the divergence of underlying values between the HFHC movement and conventional hospital food procurement systems, discrepancies between supply chain intermediaries and movement advocates in relation to evaluating what constitutes a good or satisfactory product are to be expected. If definitions of what counts as local and sustainable are not aligned among all players, the environmental and social goals of participating hospitals are unlikely to be met and threats of greenwashing on the part of supply chain intermediaries are raised. In order to facilitate procurement through existing channels and convergence of definitions of local and sustainable food between hospitals, Group Purchasing Organizations, and distributors, the Healthy Food in Health Care Program encourages hospitals to (HCWH online-f):

- Use Healthy Food in Health Care resources available online, including purchasing guides and contract conditions for distributors and GPOs incorporating sustainability criteria
- Clarify preferences through internal food policies and communicate preferences to distributors and GPOs
- Take advantage of the power in numbers by joining with other hospitals and health systems to articulate your preferences as a group
- Ask for information on current availability and for regular updates on new products as they become available
- Encourage vendors to improve search and tracking functions for sustainable items on ordering forms and invoices
- Establish contracts with specifications that meet your sustainability goals and requirements
- Serve on GPO food advisory contract development committees
- Refer specialty suppliers

4. Direct farm to hospital connections

Farmers' markets and hospital gardens are often the public face of the HFHC movement. As opposed to the above procurement efforts which shift a portion of a hospital's foodservice budget toward alternative options for cafeterias and patient meals, direct farm connections like farmers' markets and Community Supported Agriculture (CSA) offer venues for staff and visitors to make alternative purchases. Of 85 hospitals surveyed, 43 report hosting farmers' markets or farm stands at their facilities and 14 report facilitating Community Supported Agriculture programs where staff can arrange to receive a weekly or semi-weekly "veggie box" in exchange for buying shares of a farm's anticipated harvest at the onset of the growing season. Fourteen hospitals report creating gardens or farms on-site.

5. Other sustainability practices

Food procurement goals are often part of a larger sustainability agenda within HFHC hospitals. The following represent waste reduction and climate change mitigation strategies occurring in California HFHC hospitals.

a. Meat reduction

Seventy-eight percent of California HFHC hospitals surveyed report implementing a meat reduction strategy. This falls under Health Care Without Harm's *Balanced Menus: Less Meat, Better Meat* campaign, which is motivated by a number of environmental health problems associated with livestock production including greenhouse gas emissions, overuse of antibiotics, and air and water contamination from Confined Animal Feeding Operation emissions (HCWH online-a). HFHC hospitals (N = 33) report using a variety of strategies to reduce meat and poultry servings:

- Offer at least one protein-balanced vegetarian or vegan menu option at each meal for patients and in cafeteria (73%)
- Cafeteria menu is meat-free one day per week (27%)
- Patient menu is meat-free one day per week (18%)
- Reduce portion sizes of meat and poultry offered in patient and cafeteria meals (36%)
- 50% or more of daily meals served are vegetarian or vegan (9%)

b. Food waste reduction

The *Healthy Food in Health Care Program* lists food waste reduction as another climate change mitigation strategy foodservice departments can engage in. They cite research that shows that the approximately 40 percent of food in the United States that is disposed of is the single largest component of municipal solid waste in landfills accounting for a large proportion of landfill-related methane emissions (Gunders 2012). California HFHC hospitals (N = 61) report using the following strategies to reduce food waste:

- Prevent overproduction (69%)
- Track food waste (44%)
- Reduce trim waste, spoilage, burnt/dropped/contaminated items (26%)

- Use compostable service ware and take-out containers (33%)
- Reduce portion sizes (73%)
- Cook to order/provide room service (23%)
- Implement a composting program for organic materials (21%)
- Set food waste reduction goals (18%)
- Usable food donation program in place (18%)

c. Energy reduction

HFHC advocates point out that hospitals are major consumers of energy, operating 24 hours per day and expending about twice as much total energy per square foot as traditional office spaces (www.healthierhospitals.org). California HFHC hospitals (N = 60) report using the following strategies to reduce their energy and water use in their foodservice departments:

- Purchase energy efficient light bulbs for cafeteria and back of house (46.5%)
- Train staff to turning appliances off when not in use (45%)
- Purchase Energy Star and/or WaterSense rated commercial foodservice equipment (40%)
- Conduct energy audits (23%)
- Create an equipment purchasing policy that prioritizes “total cost of ownership” and “energy/water efficiency” instead of lowest initial purchase price (16.5%)
- Replace all pre-rinse spray valves with low-flow alternatives (15%)
- Implement demand control ventilation systems (10%)

6. Healthy food and beverage environments

Finally, HFHC activities typically occur concurrently with foodservice changes that straddle sustainability objectives and traditional nutrition-oriented goals. The uptake of Health Care Without Harm’s *Healthy Beverages Program* in hospitals demonstrates the tensions that arise between HFHC discourse and hospital actors’ interest in making food procurement changes to address diet-related diseases like obesity. Health Care Without Harm cites a variety of sustainability concerns associated with the production, consumption, and waste associated with sugar-sweetened and bottled beverages such as pesticide use in corn production for high fructose corn syrup and excessive waste and water use associated with plastic bottles. They also discuss the role the health care sector can play in promoting safe public drinking water as an issue of social justice. Yet, many hospitals participating in HFHC efforts frame the elimination of sugar-sweetened beverages as a way for hospitals to serve as models of healthier eating in order to address rising rates of obesity and diabetes. Likewise, they often include activities like removing deep-fryers, increasing whole-grain products, and improving the nutrition profile of vending machine items as part of their HFHC work. This is typically framed as part of an increasing focus within public health on creating healthy food and beverage environments where the food most readily accessible is aligned with traditional nutrition criteria.

a. Beverage environments

Seventy-eight percent of hospitals surveyed report having initiated a Healthy Beverages Program at their facility. Hospitals (N = 43) report undertaking the following activities in order to increase access to tap water, reduce and eliminate sugar-sweetened beverages, and reduce bottled beverage waste:

- Offer pitchers for meetings and conferences rather than single-use containers (65%)
- Provide bulk or fountain beverage stations in cafeteria e.g. infused water, iced tea (44%)
- Offer discounts for reusable containers in cafeteria or at coffee kiosks (35%)
- Use price incentives to encourage use of fountain drinks over bottled drinks (32.5%)
- Provide reusable water containers in cafeteria & indicate availability through signage or shelf space (25.5%)
- Eliminate sugar-sweetened beverages (21%)
- Eliminate single-use water bottles throughout facility, including vending machines and conferences (18.5%)
- Provide clear signage in break rooms and vending areas indicating the nearest publicly available water fountain (14%)

b. Food environments

Activities such as reducing meat servings and creating seasonal menus to allow for increased use of local produce connect sustainability and nutrition goals, while other activities fall more squarely into a traditional understanding of healthy food. Around a third of facilities reported doing one of the following: use whole grain options for a minimum of fifty percent of grains and breads, create seasonal menus, and promote breast feeding over formula. Around a quarter of hospitals have reduced prices on healthier options like salad bars and/or increased pricing on unhealthy items, eliminated the practice of free formula giveaways, and adopted minimum standards to incorporate healthier foods in vending machines.

Over half of the facilities surveyed have eliminated trans fats (partially hydrogenated/fully hydrogenated) and created a heart-healthy oils purchasing policy. Close to half have reduced products with high fructose corn syrup while nearly a third have eliminated deep-fried foods from patient meals and cafeterias. Hospitals also report implementing the following strategies: develop a purchasing policy to eliminate artificial food coloring and flavoring, implement a policy requiring disclosure and elimination of nanotech additives, and end contracts with fast food companies.

Models and Advocates

Despite the rise in private health care institutions, the majority of hospitals in the United States are still nonprofit, mission-driven organizations (www.AHA.org). There is an underlying assumption in the health care sector that hospitals, as organizations, can and should advocate for positive change in the communities in which they are located. As the American Medical Association *Sustainable Food Resolution* states, “Hospitals should become both models and

advocates of healthy, sustainable food systems that promote wellness and that ‘first do no harm’ (AMA 2008).

The fact that hospitals played a pivotal role in the anti-tobacco movement is often referenced in HFHC literature. In many communities, hospitals were among the first places where smoking was restricted, leading to restrictions in other workplaces and institutions (Cohen and Mikkelsen 2004). Like the first hospitals to ban smoking on their grounds, some HFHC hospitals understand that they are putting their moral weight behind societal change through their new food initiatives. “It’s not just about the food we serve, it’s about the message, the symbolism of it,” stated the CEO of one participating hospital (Interview #61 2011). A set of hospitals have come together around HFHC goals in San Diego, stating:

"Hospitals are a recognized authority on health and wellness. In this role, they can serve as a role model in making the healthy choice the easy choice and offer a perfect setting to inform patients and the community on the connection between diet and human and environmental health." (Arnett 2012)

In hospitals participating in the HFHC movement, cafeteria displays and patient tray fliers extol the benefits of organic, local, and other targeted purchasing choices. Of the California HFHC hospitals I surveyed, many report using a variety of strategies to educate patients, employees, and the community about their alternative food efforts:

- Post cafeteria signage, such as table tents and posters, and/or use patient tray cards or bookmarks with information about sourcing from sustainable companies, vendors, and farmers
- Promote local, healthy, and sustainable items in cafeterias and on patient menus
- Post signed copies of the Healthy Food in Health Care Pledge in cafeterias
- Include local and sustainable food programs and issues in newsletters
- Create wellness committees and green teams
- Host employee and community engagement classes and educational events
- Upon hire, teach foodservice staff about the facility’s sustainability initiatives

Overall, the HFHC movement holds a three-fold promise for advancing the alternative agrifood movement, by shifting hospital food dollars to alternative foods and to alternative supply chain infrastructure, by shifting public discourse around healthy food, and by leveraging the moral authority of health professionals to advance alternative agrifood policy.

Chapter 3

Ecological Nutrition

In 1912, Casimir Funk coined the term *vitamin*, setting off a century of scientific discoveries of an ever-expanding raft of food artifacts from carbohydrates and proteins to isoflavones and antioxidants. This reductive approach to food and health is pervasive in Western society. As any modern eater knows, their food-related health depends on eating *balanced meals* of food groups and food components. The ascendance of nutrition science as ideology, or *nutritionism* has come to dominate our way of conceptualizing the relationship between food and the body (Scrinis 2008, Pollan 2008).

In its myopic focus on the biochemistry of food, nutritionism forecloses questions about the health, social, and environmental impacts of the food system. Nutritionism guides us, for example, to ask only about the level of vitamin C in an apple, not about whether it was grown with pesticides or shipped 1500 miles, nor about who benefited from its sale or which eaters had access to purchasing it. HFHC discourse is the antithesis of a nutritionism approach in its attention to a broad set of health issues related to the interconnectedness of ecological systems, food systems, and human bodies.

HFHC advocates argue that not all apples are created equal; that a given apple's path through the food system results in particular health and environmental benefits or costs. In a nutritionism approach, a balanced meal sits on the plate devoid of history, measured only in terms of its constituent parts (Mudry 2009, Cullather 2007, Scrinis 2008). In contrast, HFHC discourse examines food on the plate – or a hospital patient's tray – as a product and embodiment of complex networks constituted by social, economic, political, techno-scientific, and more-than-human natural entities, practices, and processes.⁸ While one apple may emerge from networks including Monsanto, diazinon, corporate consolidation, high fructose corn syrup, and Chile, another might emerge from a network including family farmers, compost, regional produce distributors, and U.S. organic standards.

This is a new conception of nutrition for an ecological age, or what I am calling *ecological nutrition*. Nutritionism discourse is emblematic of the reductionism of modern science and the atomistic, autonomous bodies of a modern capitalist worldview (Nash 2006). Ecological nutrition, in contrast, turns attention to interconnection, context, and complexity. Like other risks to human health attendant to industrialization – air contamination, water pollution, and climate change – the externalities of the industrial food system central to an ecological nutrition

⁸ For a related analysis see (Leitzmann and Cannon 2005).

discourse place the well-being of human bodies and societies within ecological systems, demonstrating that we are not separate from the rest of nature as the Modern worldview has imagined us to be (Beck 1992, Latour 1993, Nash 2006).

An ecological nutrition approach represents three important shifts that reconceptualize the relationship between food, health, and the environment: from biomedical to ecological bodies, from personal to collective responsibility, and, in assessing the most pressing food-related challenges facing society, from the role of specific nutrients in our diet to addressing the ills associated with the dominant food system.

From Biomedical to Ecological Bodies

Nutrition science tells us that our bodies are made of iron from leafy greens, zinc from red meat, and carbohydrates from sweet potatoes. New scientific technologies of biomonitoring tell us that eaters of the modern, industrial food system are also made of DDT, atrazine, bisphenol-A, and a host of other novel substances invented by the chemical and agribusiness industries (CDC 2009). It tells us that scores of pesticides can be found in the umbilical cord blood of newborns (EWG 2005) and that predator fish like tuna are contaminated with mercury originating, perhaps, in a coal plant thousands of miles away (Selin 2009). Recent research tells us that industrial chemicals like PCBs make their way from electrical engines to cow pastures to the milk we drink (Gussow 1985) and that chemicals used to make plastics pliable leach from food packaging and disrupt our bodies' endocrine systems (Wagner and Oehlmann 2009).

The permeability of our bodies revealed by these material transits move us beyond the biomedical conceptualization of human bodies as singular, bounded by skin, and separate from the environment to an *ecological body* understood in relation to an exchange between inside and outside, fluxes and flows, and interdependence with the surrounding environment (Nash 2006). These *transcorporeal* flows and exchanges between the world out there and the world within demonstrate that the human is always intermeshed with the more-than-human world and that human health *is* environmental health (Alaimo 2010).

From Personal to Collective Responsibility

In step with Western allopathic medicine, a nutritionism approach takes the individual as its unit of concern and advocates individualized interventions for ensuring health. In revealing the intricate systemic connections between food and health, an ecological nutrition approach shifts responsibility from individual bodies to the collective political body and from personal responsibility to social, political, and economic institutions (Brown 2007, Morello-Frosch et al. 2006, DuPuis 2000). The individual exhorted to eat her broccoli and blueberries for cancer-fighting antioxidants under a nutritionism model comes to be seen as just one tiny node in vast networks that include politicians, pesticide companies, grocery store chains and global food manufacturers. She, alone, cannot fully determine the material flows that may matter most to her well-being – the biological trespass of pesticides and toxics into her body, the coursing of topsoil toward oceans, or the pumping of greenhouse gases into the atmosphere.

In shifting from an individualistic to a systems perspective, an ecological nutrition approach highlights that those bodies at greatest risk have the least power to change the food system, including agricultural workers, rural communities, and low income communities of color. An ecological nutrition approach subverts the moralization implicit in a great deal of *good food* or *foodie* discourse which puts the burden of eating well on the individual and which rests on the individual's ability to pay for and gain access to *better* food. Taking a systemic approach, it places responsibility on governments to ensure the health and well-being of all citizens and on those with power within the system to create the conditions that make good food the norm.

From Scurvy to the Factory Farm

Nutritionism extols the benefits of eating more fish for Omega-3 fatty acids even as fisheries across the globe are collapsing. From the perspective of ecological nutrition, the most pressing food-related challenges have shifted from *scurvy* to the *factory farm*, in other words, from understanding the role of specific nutrients in our diet to addressing the ills associated with the dominant food system. Recommendations for a balanced diet are a moot point if our ability to produce food is undermined by industrial modes of production.

As economic theorist Karl Polanyi asserts, market rules tend to disembed commodities from their human and natural origins, leading to the degradation of the social and natural substance of society (Polanyi 1944). The agrifood practices that HFHC advocates decry, which, in their words, "afford farmers the ability to circumvent natural systems" leading to environmental and health externalities (Harvie et al 2009, p. 410), have often arisen in the interest of overcoming the limits to capital presented by ecological realities. Global shipping and refrigeration allow agribusiness to overcome the constraints of seasonality, use of antibiotics in livestock production allow for overcrowded living conditions, food processing and preservatives thwart natural processes of decay.

Polanyi argues that this disembedding also leads to social countermovements that push toward greater social and health protections – there is a *double movement*. In the current age of ecological crisis, we better understand that nature itself practices a form of double movement, resisting the forces of disembedding by responding to crops genetically engineered to be resistant to herbicides with superweeds, to Confined Animal Feeding Operations with ever-more virulent pathogens, and to pesticides with evolving insect resistance (Goodman 1999, Boyd, Prudham and Schurman 2001, Altieri 2004). Because *we* are nature, we experience the movement as costs to well-being. Rising rates of cancers, diabetes, and other food-related diseases can be read as stories our bodies tell about the costs of a food system shaped by industrial norms of efficiency and standardization and driven by capitalist imperatives of profit maximization (Goodman, Sorj and Wilkinson 1987, Kloppenburg 2005). The resulting corporeal stories reveal systemic inequalities as negative health impacts accrue disproportionately within the food system.

Here, human bodies are both flesh and metaphor, beset by a growing assemblage of health woes attributed to the dominant agrifood system, as well as the portal through which we tell a different story about our relationship to agrifood practices and policies. In the HFHC movement, the body and its disease or well-being are at the center of serious contestations over the food system, right use of the landscape, and appropriate use of agrifood technologies. Speaking for dis-eased bodies, HFHC advocates can be understood as seeking to re-embed the food system within its ecological context through transformation of food commodity networks, public health and agricultural policies, and cultural notions of what constitutes healthy food.

“Let Food Be Thy Medicine”

Yet, simply establishing a connection between nutrition and health remains a steep hill to climb within the medical field. The 1988 *Surgeon General’s Report on Diet and Health* acknowledging that there was incontrovertible data to establish the relationship between diet and chronic disease was seen as a significant policy victory for nutrition (Cohen and Mikkelsen 2004). Two decades later, despite many entreaties to improve the state of nutrition education in medical schools, the average medical student receives a mere 24 hours on nutrition over the course of their training and only 30 percent of medical schools surveyed require students to take a nutrition course (Adams et al. 2006).

There is evidence, however, that Hippocrates’ assertion, “Let food be thy medicine and medicine be thy food,” is being dusted off within the health care sector due to mounting concern about diet-related diseases. When administrators and clinicians are engaged in HFHC initiatives, it is often through the lens of the “obesity epidemic.” The argument is made that the health care sector is bearing the burden of increasing rates of diet-related disease, drawing on data that cites the multi-billion dollar costs of treating obesity (Cawley and Meyerhoefer 2012), diabetes (ADA 2013), cardiovascular disease and cancers (Heidenreich et al. 2011).

Like Michelle Obama's *Let's Move* campaign, an emphasis on local foods is seen primarily as a way to generate interest in improving people's diets by inspiring them to eat more fruits and vegetables. One foodservice production supervisor I interviewed stated, "The bottom line is that local food tastes better" (Interview #46 2011). In this context, actions like hosting farmers' markets on hospital grounds are lauded for increasing community members' access to fresh fruits and vegetables rather than for contributing to broader food system benefits, such as providing market opportunities for local farmers (e.g., CDPH 2010). This points to a potential obstacle to the uptake of HFHC ideals in the health care sector: given the focus on individuals as the most important level of intervention within the biomedical model, ecological nutrition concerns may morph into yet another set of dietary guidelines focused on personal responsibility and behavior change, replacing "eat your broccoli" with "buy organic" and "shop at your farmers' market."

The dominant discourse in public health circles, however, has recently shifted from an emphasis on personal responsibility to the importance of healthy *food environments* for addressing obesity and diet-related disease, including framing generated by the Centers for Disease Control and Institutes of Medicine (CDC online, Parker, Burns and Sanchez 2009). The focus has moved

from individual choice and education toward legislative and regulatory actions, such as improving school nutrition, altering industry marketing practices, and even more controversial measures like the use of food taxes that create healthier default choices. While this shift from individualistic to collective responsibility could be seen as a move toward an ecological nutrition approach, targeted actions are typically focused on a more traditional approach to nutrition and exercise, for example, requiring nutritional information on menus or improving access to safe playgrounds in communities.

Health Care Without Harm often plays judo with this rise of interest in obesity and diabetes, opening with arguments about changing hospital food environments to address diet-related disease and then making the case for more systemic social and environmental goals. However, this presents the potential for *obesity capture*, for hospitals to get involved in making changes in their foodservice departments only to stop at nutritionism-type measures such as removing deep fryers from their cafeterias or eliminating sugar-sweetened beverages from their patient menus. One example is hospitals' engagement in the Healthy Food in Health Care Program's *Healthy Beverages* campaign. While the campaign draws on a systems-based analysis of various issues related to beverages – such as problems associated with rBGH in dairy production, overuse of pesticides in the production of corn for high fructose corn syrup, and the importance of advocating for safe public drinking water – hospitals gravitate toward just one aspect of the campaign, reducing and eliminating sugar-sweetened beverages, since they are increasingly fingered as a major contributor to overweight and obesity (Pereira 2006).

Still, the Healthy Food in Health Care Program organizers are not the only ones who move deftly from statistics on diet-related diseases to complex HFHC goals. One CEO of a leading hospital cites the "national crisis" of rising rates of obesity and diabetes as his motivation to take action within his own facility, yet his actions are far more aligned with an ecological nutrition approach than with a nutritionism model (Interview #61 2011). In the past few years, his hospital has developed an organic farm on its grounds and is working to increase their procurement of local food, hormone-free dairy products, and antibiotic-free meats.

Some insurance companies are beginning to make innovative connections between health outcomes and the food system. United Health Group, a major U.S. insurance company, funded the Columbia Urban Design Lab and MIT Collaborative Initiatives to take a systems-based look at obesity. The report, *Food and Health: Using the Foodsystem to Challenge Childhood Obesity*, details socio-cultural changes that have contributed to rising rates of obesity, including agricultural production methods, food processing, and farm policy. The authors argue for a series of integrated regional-scale food systems nationwide as the means to ensuring affordability, access, quality, and health (Albright and Conard 2009). Putting this type of approach into action, members of three health plans in Wisconsin can receive "wellness" reimbursements for joining a Community Supported Agriculture program – an alternative agriculture model where customers pay at the onset of a growing season for a share of anticipated harvest (FCSAC online).

The greatest promise for continued uptake of HFHC ideals in hospitals may be the growing agreement that the health care sector should not only treat sickness but should take steps to actively prevent disease and preserve wellness. The Affordable Care Act, for example, signals a turning point in the fundamental nature of the U.S. health system toward promoting health and wellness by aiming to improve insurance coverage of preventive care (APHA 2012). Unlike the current reimbursement system, which can financially penalize physicians for keeping people healthy, the Affordable Care Act, if properly executed, will provide reimbursements for, e.g., reducing the number of diabetics in a practice groups' care based on certain wellness benchmarks (Pritchard 2012). While many HFHC initiatives don't result in measurable health outcomes, therefore falling outside the purview of this type of incentive, they benefit from increasing ideological support within society and the health care sector for prevention-based action and the growing discourse around hospitals as places that promote overall wellness (FSD 2013). As support for a prevention-based model of health care grows, wise food provisioning and investment in a healthier, more sustainable food system may become more central to health care's fundamental mission of healing.

First, Do No Harm

HFHC advocates argue that true prevention means ensuring healthy ecosystems as the foundation of human health. Although this is a radical departure from a biomedical model of health, it is becoming more widely accepted as true at a societal level. One clear example is the United Nation's Millenium Ecosystem Assessment warning that, "Human activity is putting such strain on the natural functions of Earth that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted" (MEA 2003). Humans are not exempt from the forces of extinction, argued Van Potter, founder of the field of *bioethics*, which brought together environmental and medical concerns (1971).

As data accumulate on environmental degradation associated with the global, industrial food system from soil erosion (Montgomery 2007) and water use (Pimentel et al. 2004) to contributions to climate change (Robertson, Paul and Harwood 2000, McMichael et al. 2007), an ecological nutrition approach can be understood as not simply a manifestation of the alternative food zeitgeist – a romance, say, with local food or with cultural notions of wholesome and natural food (Guthman 2003, Belasco 1993, DuPuis 2000) – but as a forthright grappling with fundamental questions of human survival.

In attempting to put this bioethical approach into practice, nonprofit organizations leading the HFHC movement are expanding the physician's basic duty to *first, do no harm* to apply to the health care sector as a whole (www.noharm.org). They make the case that health care institutions and professionals have an obligation to take action to address environmental health problems associated with the industrialized food system. Rather than continuing in a narrow biomedical paradigm that may result in a "potentially unbounded investment in the rescue of the acutely ill and the treatment of the dying" (Pierce and Jameton 2003 p.3), they argue that health care resources should be reallocated toward primary prevention, in part by supporting the development of a sustainable agrifood system.

By tasking the health care sector with the duty to *first, do no harm*, or to “treat the community as the patient,” in the language of Health Care Without Harm’s founder, Gary Cohen (Cohen 2013), they are asserting that it is unethical for a hospital to purchase food that contributes to impairment of human health or the ecosystem functions on which we depend. The HFHC movement uses this ecological nutrition framing to call on hospitals to put their purchasing power behind shifting the marketplace and to leverage the moral authority of doctors, dietitians, and other health experts to create food system change.

Chapter 4

From Hospital to Farm

In many ways, the HFHC movement is focused on farm-to-hospital efforts and the networks through which food products travel, however, the hospital is also “going to the farm” as doctors, nurses, dietitians and other health professionals perceive that they have a stake in the way food is produced, processed, and distributed. This chapter presents an editorial written for a medical journal, *Antibiotic Overuse in Animal Agriculture: The Scientific and Policy Landscape*, demonstrating the agrifood policy implications of aligning health professionals behind an ecological nutrition approach. Examining the HFHC movement’s response to the use of antibiotic use in livestock production is illustrative of the ways an ecological nutrition approach connects the dots between public health, the food system, vulnerable populations, and the role the health care sector can play as a model and advocate of change.

As discussed in more detail below, eighty percent of all antibiotics sold in the U.S. are used in animal agriculture, including many that are directly relevant to human medicine (FDA 2011a). The practice contributes to more rapid growth of animals and allows for overcrowded and unsanitary living conditions on factory farms by serving as a prophylactic treatment for the spread of disease (National Research Council 1999). Independent health experts have reached consensus that the practice poses a threat to human health by providing selective pressure for resistant bacteria, which increases the number of bacterial infections annually and worsens their severity (WHO, FAO and OIE 2003, CDC 2013). Despite acknowledging these links over four decades ago (FDA 1970), the FDA and Congress have repeatedly failed to create public policy to curtail the practice.

Rather than a biomedical approach focused on individual interventions and the development of more powerful antibiotics, the HFHC movement is calling for solutions that address primary causes, and in so doing, is facilitating the engagement of health professionals in public policy debates and is using health care institutions as public models of change by inspiring them to phase out the procurement of meat produced with subtherapeutic antibiotics.

Health Professionals and the HFHC Movement

Antibiotic overuse is just one agrifood issue targeted by the HFHC movement. Health Care Without Harm’s *Food Matters Clinical Education and Advocacy Project* aims to activate health professionals on a broad range of issues including agricultural pesticides, arsenic use in poultry production, toxics in food packaging, and the farm bill (HCWH online-c).

Using a doctor-to-doctor model where physicians participating in the HFHC movement lead the trainings, the Food Matters Project offers webinars and workshops that are accredited as Continuing Medical Education for physicians and Continuing Education Units for nurses,

dietitians and other health professionals. Their 2010 webinar series was co-sponsored by the American Medical Association and Kaiser Permanente and included trainings on:

- Organic Foods, Pesticides and Sustainable Food Production
- Antibiotic Overuse: Why Healthcare Should Care about Agricultural Use
- Healthy Food in Healthcare: The Role for Healthcare in Food and Agriculture Policy
- Obesity and Food Environments

Likewise, the nonprofit organization Healthy Food Action (www.healthyfoodaction.org) and the Hunger and Environmental Nutrition Dietetics Practice Group of the Academy of Nutrition and Dietetics (www.hendpg.com) offer a host of educational materials that seek to enroll health professionals in an ecological nutrition approach.

The HFHC movement can be seen as radicalizing a set of health professionals in its shift from a biomedical to an ecological approach to health and illness. Even as our awareness of environmental illness grows (Kroll-Smith, Brownell and Gunter 2000), the reductionism of the biomedical model is farther entrenched in our approach to disease (Rose 2007). The latter is rooted in a germ theory model focused on specific etiological agents of disease, on individualized interventions, and on the gold standard of double blind clinical trials as the basis from which to make decisions about the efficacy of interventions. An ecological nutrition approach, in contrast, is rooted in a public health model focused on social, political, and economic drivers of illness, on communities as opposed to individuals, and on acting based on the weight of epidemiological and toxicological data.

In their examination of the role of physicians in detection and treatment of environmentally-induced illness, Brown and Kelley (2000) discuss the difficulty for many physicians in bridging the gap between a biomedical and public health approach. They find that while some public health issues have gained traction in clinical practice over time, for example anti-smoking, seat-belt use, and assessing childhood lead exposure, that physicians typically do not step outside the boundaries of their medical practice to address environmental health hazards like air contamination, radiation, or exposure to toxic chemicals. These issues are likely to be tied to sources of political, economic, and social power, they argue, thus confronting them involves challenging businesses and government, a role many physicians may not be comfortable playing (Brown and Kelley 2000).

Is Food the New Tobacco?

Yet, in the case of anti-tobacco campaigns, robust relationships continue to be built between public health advocates and the health care sector (e.g. ANR online). HFHC advocates draw connections between their efforts to use the power of health care institutions to drive systemic change and the fact that hospitals were among the first public places to enact smoking restrictions, leading to greater public awareness and restrictions in other locations (Cohen and Mikkelsen 2004).

The HFHC movement is using a similar approach in the case of antibiotics, asking hospitals to model what they identify as a necessary environmental change – the cessation of antibiotic use in livestock production. At one leading HFHC hospital, University of California, San Francisco Medical Center (UCSF), the Academic Senate Coordinating Committee, the School of Pharmacy

Faculty Council, and the School of Medicine Faculty Council unanimously approved a resolution in April of 2013 to phase out the procurement of meat and poultry raised with non-therapeutic antibiotics in the UCSF foodservice department and urged all University of California campuses to do the same (Thottathil and Sayre 2013).

At an October, 2013 summit focused on putting the resolution into action (SF PSR online-a), Dr. Mike Martin, a clinical epidemiologist at UCSF, made explicit connections between the movement for public smoking bans and the new antibiotics resolution, pointing to common factors of public controversy, strong opponents, and the need for government regulation (Martin 2013). Martin, who has long been a proponent of public smoking restrictions (McGuire 1987) argued that, just as the medical community should be compelled to take action to protect people from passive smoke exposure, it should take action based on the evidence that routine use of antibiotics in animal agriculture poses harm to farm workers, consumers of meat, and society in general (Martin 2013).

Another leading HFHC hospital, Fletcher Allen Health Care of Burlington, Vermont, implemented an antibiotics reduction plan for its foodservice department in 2008. Now, 93 percent of its beef and nearly 100 percent of its poultry purchases are produced without subtherapeutic and medically-important antibiotics. Health Care Without Harm's *Balanced Menus Challenge* calls on hospitals nationwide to reduce the overall amount of meat served while investing the resulting savings in the purchase of alternative products, including meat and poultry produced without the use of subtherapeutic antibiotics (HCWH online-a). This approach was endorsed by thirteen major U.S. health systems in 2011 through the Healthier Hospitals Initiative *Healthier Food Challenge* (HHI online).

As in the case of tobacco, addressing antibiotic overuse in animal agriculture will require the health care sector to take a stand in the face of entrenched economic interests. As just one of a host of health and environmental externalities attendant to the industrialization of agriculture, increasing rates of antibiotic-resistant bacteria associated with subtherapeutic dosing of livestock can be understood as arising from what Beck identifies as the constant push toward productivity within capitalist systems (1992); curtailment, therefore, poses a threat to capital and must happen in the face of industry.

Advocates face significant resistance to change. It has been over four decades since the U.S. government publicly acknowledged that subtherapeutic use of antibiotics in animal feed fosters the emergence of antibiotic-resistant bacteria (FDA 1970). That the FDA and Congress have yet to regulate the practice points to the lobbying strength of the pharmaceutical and livestock industries (Wallinga 2012). To date, the FDA's strongest policy is a 2012 draft guidance calling for voluntary action from pharmaceutical and livestock companies for more prudent use of medically-important antibiotics in animal agriculture (FDA 2012a). Congressional bills such as the Preservation of Antibiotics for Medical Treatment Act, have faltered numerous times since 2007.

Moreover, public and regulatory debates on the issue continue to be framed as a contestation based on uncertain science (Wallinga and Burch 2013). Under the U.S. risk assessment regulatory model, economic interests allied around the status quo have successfully postponed or

avoided restrictions on a host of activities by calling into question the nature and extent of the scientific evidence demonstrating potential environmental or public health risks, as in the case of tobacco, asbestos, and PCBs (Kroll-Smith et al. 2000). Like antibiotics in livestock production, many of the concerns at the heart of the HFHC movement are embroiled in debates about risk, precaution, and scientific evidence, including agricultural use of pesticides, toxics in food packaging like Bisphenol-A and phthalates, use of growth hormones in animal agriculture, and genetically modified crops.

The nonprofit organizations leading the HFHC movement are explicit about leveraging the moral and cognitive authority associated with the health care sector to motivate precautionary action based on the weight of the available evidence. For example, in April of 2013, Health Care Without Harm submitted a letter to President Obama and the FDA signed by nearly 800 clinicians demanding a ban on the use of medically-relevant antibiotics in animal agriculture, as well as 530 clinician comments to the FDA expressing opposition to the approval of genetically engineered salmon. Just as the voice of health professionals has been crucial to anti-smoking campaigns (NLM online), the HFHC movement aims to serve as a platform to leverage the moral authority of doctors, nurses, dietitians and other health experts in relation to agrifood policy change. Demonstrating the type of policy action occurring in the HFHC movement, the following editorial calls on health experts to support public policy to eliminate the overuse of antibiotics in animal agriculture.

Antibiotic Overuse in Animal Agriculture: The Scientific and Policy Landscape

Kendra Klein and Sapna Thottathil⁹

Despite ongoing public debate about the long-term impacts of the routine use of antibiotics in animal agriculture, there is strong consensus among independent health experts that the practice poses a threat to human health by providing selective pressure for resistant bacteria. It is a position shared by the U.S. Institutes of Medicine, the U.S. Centers for Disease Control, the World Health Organization, and leading medical associations (FAO 2004, WHO et al. 2003, Smolinski, Hamburg and Lederberg 2003, AMA online, AAP 2004).

Since 2000, an estimated 900,000 antibiotic resistant infections have occurred in the U.S. annually, including more than 94,000 invasive infections and 18,650 deaths from methicillin-resistant *Staphylococcus aureus* (MRSA) in 2005 alone (Klevens et al. 2007, Roberts et al. 2009). Resistance increases the number of bacterial infections, worsens their severity, and helps drive up hospital costs. Longer, more expensive hospital stays for treating antibiotic resistant infections cost patients more than \$20 billion each year and American households an estimated \$35 billion in lost wages and indirect costs (Roberts et al. 2009).

Health care practitioners have been warning for over a decade that routine use of antibiotics in livestock production undermines the efficacy of antibiotics for human health (Gorbach 2001). Scientific evidence has only grown stronger and more numerous since, suggesting that efforts should be redoubled to phase out the non-therapeutic use of antibiotics in animal agriculture. Just as steps are being taken to reduce overuse of antibiotics in the health care sector, so, too, health professionals and health care institutions should engage in regulatory efforts to eliminate the overuse of antibiotics in animal agriculture.

The Science: Human health risks related to antibiotic use in animal agriculture

Recent data indicate that 29.9 million pounds of antibiotics are used in animal agriculture annually in the U.S.; this represents 79.5 percent of all antibiotics sold and four times the amount used in human medicine (FDA 2011a). Two-thirds of these are directly relevant to human medicine, including penicillins, cephalosporins, macrolides, sulfas, and tetracyclines. The vast majority are added routinely to animal feed and water for non-therapeutic purposes of growth

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promotion and compensation for unhygienic living conditions. Unlike human medicine, this use does not require a prescription. Recent research demonstrates that evolutionary selection for resistant bacteria can occur at the type of low-level concentrations administered in animal feed, creating reservoirs of resistant bacteria (Gullberg et al. 2011).

The science documenting the transfer of bacterial resistance from farm-based reservoirs to the broader human population is extensive, numbering more than 147 studies (Liu and Wallinga 2012). Human exposure to antibiotic-resistant bacteria of farm origin can occur through multiple pathways. Resistant bacteria can transfer to workers who directly handle animals, feed, or manure, or via contact with soils or water contaminated by manure (Heuer, Schmitt and Smalla 2011).

Consumption of contaminated retail meat is the most recognized exposure pathway. The 2011 National Antimicrobial Resistance Monitoring System data show that 81 percent of turkey samples, 69 percent of pork, 55 percent of beef, and 39 percent of chicken samples were contaminated with antibiotic-resistant *Enterococcus faecalis*; of the 12 percent of chicken sampled that contained *Salmonella*, 74.1 percent were resistant to one or more antibiotics (FDA 2011b). Additionally, 26 percent of chicken samples contained resistant *Campylobacter jejuni* and 53 percent were tainted with *E. coli*. An increasing number of studies lend support to the idea that outbreaks of multi-drug resistant UTI infections caused by extraintestinal pathogenic *Escherichia coli* (ExPEC) are foodborne (Vincent et al. 2010).

In addition, recent studies demonstrate that resistant bacteria can be exchanged directly between farm animals and humans. Price *et al.* found evidence of bidirectional zoonotic exchange of *Staphylococcus aureus* and methicillin resistance between humans and food animals. Using full genome sequencing, they documented that methicillin-susceptible *Staphylococcus aureus* (MSSA) in humans jumped to livestock, where resistance to tetracycline and methicillin was acquired and amplified (Price et al. 2012). Harrison *et al.* recently confirmed two cases of human MRSA infections in the U.S. originating in livestock (Harrison et al. 2013).

Less recognized are the risks to human health arising from commensal bacteria that carry resistance, as they may transfer their genetic material to more pathogenic bacteria colonized in the human gut (Yang et al. 2010, Austin, Kakehashi and Anderson 1997).

The Policy Landscape: Federal action to date

Effective action to address overuse of antibiotics in animal agriculture in the United States is long overdue. Experience in Europe demonstrates that routine use of antibiotics in feed is unnecessary for the health of animals or for economically-viable meat production. Denmark, one of the world's largest pork exporters, phased out virtually all antibiotics used for growth promotion in poultry and swine in 1999 (excluding ionophores and monensin, which are not used in human medicine). According to a World Health Organization analysis of the Danish experience, the transition away from routine use of antibiotics occurred with little or no adverse

impacts on animal welfare, farmer profitability, or consumer meat prices (WHO 2003). Today, Danish meat production uses approximately one-sixth of the antimicrobials to produce a pound of meat compared to U.S. meat production.

In 2006, the European Union followed Denmark's example, banning antibiotics for growth promotion in animal agriculture. Following these measures, there has been a decrease in levels of antibiotic resistance found in livestock, in retail meat, and within the general population (Smith, Dushoff and Morris Jr 2005).

Within the US Food and Drug Administration (FDA), there is historical precedent for action to address antibiotic resistance in animal production. In 2005, the FDA withdrew approval of the use of enrofloxacin, an antibiotic in the fluoroquinolone class, to treat flocks of poultry when it was determined that the practice promoted the evolution of fluoroquinolone-resistant strains of *Campylocacter*, a human pathogen (FDA 2000). Fluoroquinolones such as ciprofloxacin are widely used in the treatment of human disease. In 2012, the FDA banned the off-label use of third generation cephalosporins in broiler chicken eggs, chickens, swine and cattle after researchers linked the practice to the spread of cephalosporin-resistant *Salmonella* infections (FDA 2012b).

As early as 1977, the FDA noted that the use of penicillins and tetracyclines in animal feed posed a public health risk (FDA 2012c). Despite this acknowledgement and precedent for action, however, the FDA has not withdrawn its decades-old approval for use of antibiotics as growth promoters in animal feed. To date, the agency's strongest policy is a 2012 draft guidance calling for voluntary action from the pharmaceutical and livestock industries for more prudent use of medically-important antibiotics in animal agriculture (FDA 2012a). The Guidance does not include a timeline or other means of evaluating its effectiveness.

Given the lack of action at the FDA, many public health advocates have turned attention to Congress. In early 2013, Congressional debate focused on the Animal Drug User Fee Act (ADUFA). During ADUFA's reauthorization in 2008, it was amended to require the FDA to collect and report data on sales of antibiotics for use in livestock production for the first time. In 2013, public health advocates fought to amend ADUFA to require the FDA to publicly report more specific details on the data it is collecting, including which medically-relevant antibiotics are used in which food animals and for what purposes. However, the amendments were not included in the bill's reauthorization.

A related bill, the Delivering Antimicrobial Transparency in Animals Act (DATA), was introduced in the House of Representatives in 2013. DATA contains language authorizing the FDA to collect and report data that is missing in ADUFA, but the bill is unlikely to garner enough votes to pass.

Representative Louise Slaughter, a microbiologist by training, introduced the Preservation of Antibiotics for Medical Treatment Act (PAMTA) into the House in early 2013. PAMTA would sunset FDA approval of eight classes of medically-important antibiotics for use in animal feed, unless the registering companies could submit data showing that continued use would not create a risk to human health. A bipartisan Senate version, Preventing Antibiotic Resistance Act (PARA), was introduced into Congress in late June.

Currently, PAMTA and PARA represent the most comprehensive means of regulating the non-therapeutic use of antibiotics in livestock production. However, previous versions of PAMTA have failed to pass Congress three times since 2007.

Action in the Health Care Sector

There is increasing momentum within the U.S. health care sector to address the overuse of antibiotics in animal agriculture. More than 300 leading medical associations have publically advocated ending the use of non-therapeutic antibiotics in livestock production, and hundreds of clinicians have contacted Congress in support of legislation to protect antibiotics for human medicine (Sirois et al. 2013).

Additionally, thirteen major U.S. health systems, including HCA, Inc., Tenet Healthcare, and Catholic Health Initiatives, launched the Healthier Hospitals Initiative *Healthier Food Challenge* in 2012, which calls on hospitals to prioritize procurement of meat produced without the use of synthetic hormones and non-therapeutic antibiotics (HHI online).

Having effective antibiotics for medical use is a public good. The few should not be allowed to overuse them for their own private gain when that use erodes their future benefit for the rest. Action to preserve the effectiveness of antibiotics, like action to preserve breathable air and drinkable water, is necessary to ensure the health of all citizens.

Part 2

FROM IDEALS TO INSTITUTIONALIZATION

Chapter 5

**Gatekeepers and Good Food:
Group Purchasing Organizations and Alternative Food Procurement in Hospitals**

Abstract

Alternative food advocates are increasingly looking to institutional purchasers like schools, colleges, and hospitals as promising venues for scaling up local and sustainable food initiatives. However, the institutions emerging as the next frontier of the alternative agrifood movement are struggling to navigate the tensions between their new food goals rooted in social, health, and environmental values and their reliance on the efficiency, affordability, and standardization provided by the dominant food system shaped by commercial and industrial norms, values, and organizational structures. This paper provides empirical data and analysis on how this scale and values dilemma is playing out in relation to alternative food procurement efforts in the health care sector. In particular, it examines the opportunities and obstacles posed by a set of powerful supply chain players called Group Purchasing Organizations (GPOs). This study demonstrates that alternative food procurement initiatives in the health care sector will remain a side note to the bulk of hospital food procurement unless the relationship between hospitals and GPOs can be leveraged to increase sustainable options or renegotiated to increase flexibility in purchasing. Furthermore, if new procurement goals are to be achieved through GPO-governed commodity networks, serious concerns related to transparency, alignment of definitions, and supply chain structure will need to be addressed. This study also finds points of flexibility in health care food commodity networks and the potential for hospitals to create purchasing and informational alliances around common food goals in order to create new, values-based commodity network relationships both within and beyond GPO procurement channels.

Keywords: farm to institution; farm to hospital; alternative agrifood movements; values-based supply chains; conventionalization

I. Introduction

Today, alternative food advocates are looking to institutional purchasers like schools, colleges, and hospitals as promising venues for scaling up local and sustainable food procurement efforts. As entities with both significant purchasing power and moral authority related to issues such as food-related chronic diseases, community development, and environmental health, they are seen as key nodes in the expansion of alternative agrifood networks. *Alternative*, in this context, refers to the wide variety of regulatory, ideological, and economic efforts to transform food commodity networks to incorporate health, social, and environmental goals. It is used to

distinguish values-based procurement strategies from business-as-usual procurement in institutions.¹⁰

As a result of targeted campaigns and the uptake of the alternative food zeitgeist by institutional foodservice directors and chefs, over the past decade thousands of schools, colleges, and hospitals across the country have begun to prioritize the procurement of sustainably-produced food and to align their definitions of *healthy* and *good* food with alternative agrifood movement principles. The Farm to School Network reports involvement from 12,429 school districts across all fifty states (www.farmentoschool.org); the Real Food Challenge reports influencing \$48.5 million worth of college food spending on "local, fair, sustainable, and humane food" (www.realfoodchallenge.org); and over 460 hospitals have signed the Health Care Without Harm *Healthy Food in Health Care Pledge* (www.healthyfoodinhealthcare.org), while thirteen of the largest health systems in the country collaborated in the development of the Healthier Hospitals Initiative *Healthier Food Challenge* (www.healthierhospitals.org).

To date, the focus of the emerging *farm to institution* literature examining these efforts has been on K-12 schools and colleges (Clark et al. 2011, Diamond and Barham 2011, Vogt and Kaiser 2008, Strohbehn and Gregoire 2003, Friedmann 2007, Feenstra et al. 2011). With the exception of an initial inquiry into the health care sector conducted by Sachs and Feenstra (2008), there is a need for more research on the ways alternative agrifood initiatives integrate with health care food commodity networks. In contrast to schools, hospitals have the ability to pass on some increases in cost to customers, they need products year-round, and, ostensibly, they have a more direct imperative to provide the most healthy and wholesome food to their patrons. The research reported in this paper is the first scholarship on another distinctive characteristic of healthcare food commodity networks: the dominance of Group Purchasing Organizations (GPOs). GPOs are among the most powerful actors in health care commodity networks, yet they've received very little attention in the academic or activist literature.

GPOs act as gatekeepers to the health care market by negotiating transactions with the manufacturers, wholesalers and distributors that supply the products a hospital needs to function, from medical equipment like catheters and CT scan machines to bulk supplies like cotton swabs and latex gloves, to food and foodservice supplies. GPOs aim to aggregate member hospitals' purchasing power to obtain lower prices and eliminate duplicative transaction costs.¹¹ Figure 1 illustrates the role GPOs play in hospital food supply chains. While hospitals may negotiate purchases directly with other supply chain members such as producers or manufacturers, eighty to ninety percent of their procurement typically comes through GPO channels according to contract terms.

¹⁰Within the health care sector, the focus has been on local and third party certified products. For specific information about the sustainability criteria many hospitals use, see www.healthyfoodinhealthcare.org.

¹¹ The GPO industry reports saving the health care sector billions annually (Goldenberg 2009). However, the cost-savings benefit of GPOs is controversial (GAO 2002, Werner 2002, Litan and Singer 2010).

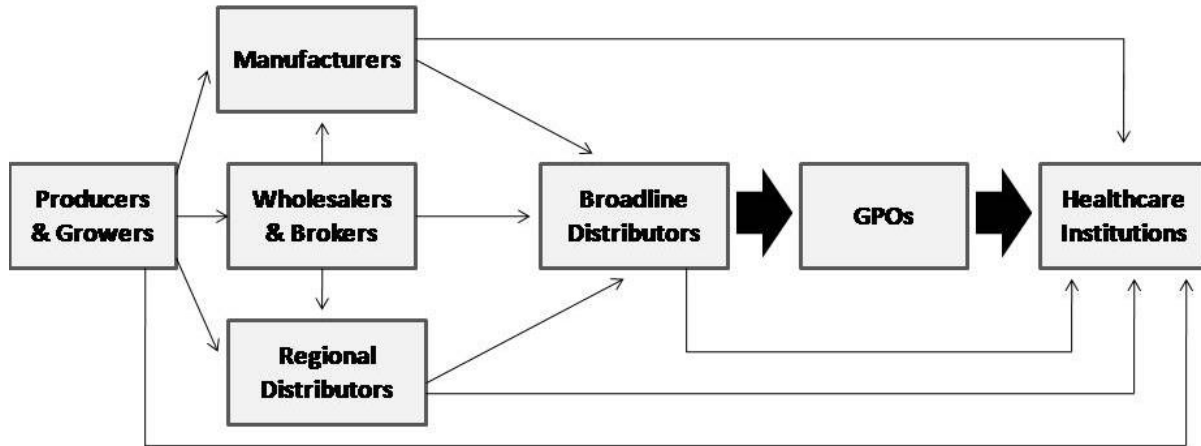


Figure 1 - General outline of hospital food supply chains
(Arrows indicating product flow not drawn to scale)

Hospital membership in GPOs is ubiquitous; according to industry data, ninety-six percent of all acute-care hospitals and ninety-eight percent of all community hospitals hold at least one GPO membership (HSCA online). Procurement through GPOs represented seventy-three percent of all non-labor hospital purchases in 2008, totaling over \$108 billion (GAO 2010).

While the scale and scope of hospitals’ food needs hold promise for expanding alternative agrifood networks, they present structural and economic challenges to the underlying values and norms of alternative agrifood movements, such as supply chain transparency, supply chain relationships of mutual benefit rather than competition, and local diversity over standardization. The relationship between hospitals and GPOs highlights the tensions that arise between hospitals’ new food goals rooted in social, health, and environmental values and their reliance on the efficiency, affordability, and standardization provided by an industrial food system shaped predominantly by commercial and industrial norms, values, and organizational structures. This tension raises questions about the capacity for alternative agrifood initiatives to integrate with institutional procurement systems without losing the robustness of the original values and goals that brought them into being.

The Scale and Values Dilemma

Various threads of analysis within the food studies literature point to an inverse relationship between the scale of food procurement and the maintenance of alternative agrifood values in commodity networks. DeLind (2011) argues that as corporations like Wal-Mart, Meijers, and McDonalds seek to capitalize on consumer interest in local food, they recreate the conditions the movement was designed to overcome, dictating standards, varieties, quantities, growing conditions, and ultimately purchase price to farmers. In her analysis of the globalization of organic agrifood networks, Raynolds (2004) argues that the growth of organic markets has fostered the rise of conventional agro-industrial norms, practices, and market relations. In particular, she notes the power of supermarkets like Tesco in the UK and agrifood corporations

like Heinz, Gerber, and General Mills in the U.S. to dictate terms for food suppliers and to pull product through conventional distribution chains that uphold industrial and commercial relations rooted in efficiency, standardization, and price competitiveness.

Likewise, Guthman (2004) notes the paradoxes that the organic food movement encountered as it expanded into industrial capitalist systems of production, replicating the practices that it set out to oppose. She is joined by a number of scholars who argue that formal, legally-sanctioned organic certifications and monitoring procedures have opened the door for the *conventionalization* of organic agriculture, undermining the original holistic norms and principles of the movement (Lockeretz and Lund 2003, Courville et al. 2006)

Meanwhile, small-scale direct markets like farmers' markets and Community Supported Agriculture are often held up as the embodiment of alternative agrifood values, including trust, transparency, connection, environmental benefit, social justice, and protection of public health (Feenstra 1997, Lyson 2004, Hinrichs 2000).

Like the findings about other farm-to-institution initiatives (Feenstra et al. 2011), alternative food efforts in hospitals come up against a number of structural and economic barriers which indicate that hospital food procurement systems, like those of major retailers, push back on the underlying values and goals of the alternative agrifood movement. These include set and limited budgets; logistical issues of preparing and serving mass quantities of food; public policy related to food safety and nutrition; the need for large and consistent product volumes; dependence on efficiencies in ordering, delivery, and billing systems; and contracted relationships with existing vendors.

Moreover, due to contractual obligations, eighty to ninety percent of a hospital's food typically comes through GPO channels. As discussed in more detail below, GPO-governed commodity networks are deeply rooted in industrial and commercial norms, in other words, price competition, efficiency, and forces of standardization through adherence to technical and quality standards such as Good Agriculture Practices.¹² They are highly consolidated and dominated by national food distributors like US Foods and Sysco and international corporate food manufactures such as Tyson, Nestle, Kraft, and Dole.

This study finds that, if alternative agrifood efforts in the health care sector are to integrate with GPO-governed commodity networks without losing the robustness of the original values and goals that brought them into being, serious concerns related to supply chain structure, transparency and traceability of alternative food attributes, availability of alternative food options, and conflicts over definitions of *local* and *sustainable* food will need to be addressed. Furthermore, this inquiry demonstrates that local and regional procurement raise the trickiest

¹² There are numerous competing GAP standards, however all put forward a set of procedures and criteria by which farms can be certified "safe." They are typically voluntary programs utilized by growers and packers to satisfy contractual requirements with retail and foodservice buyers.

questions in relation to the scale and values dilemma, since the local food movement aims to change the *structure* of the food system to create shorter, more direct supply chains rather than substitute sustainable for conventional products.

At the same time, this research also demonstrates points of flexibility in health care food commodity networks and the potential for hospitals to create purchasing and informational alliances around common food goals in order to create new, values-based commodity network relationships, both within and beyond GPO procurement channels. The experience of leading hospitals provides models of new commodity network relationships that incorporate both industrial values of efficiency and standardization with environmental, health, and social values.

II. Methods

This paper is based on three years of research comprised of semi-structured interviews, participant observation, a survey, and literature analysis. I conducted eighty formal interviews with individuals representing various aspects of hospital food supply chains: 36 interviews with hospital staff related to foodservice including foodservice directors, purchasing directors, executive chefs, and dietitians; 22 with non-governmental organizations working on alternative food procurement in the health care sector; 15 with supply chain intermediaries including GPOs, national broadline distributors, regional distributors, and alternative food hubs; 3 with state and national government agencies; and 4 with producers. Interviews represent the national scope of the movement, but were weighted toward the West Coast: 36 in California, 13 in Oregon/Washington, 19 in the Midwest, 7 on the East Coast, and 5 of national representatives.

Participant observation included involvement in over 70 conference calls, tracking of 2 related listservs, and attendance at 1 national and 6 regional *healthy food in health care* conferences. Literature analysis included examination of the trade journals *Food Management* and *FoodService Director*, as well as publications and websites produced by hospitals, supply chain intermediaries, health professional associations, and NGOs. I also designed and disseminated a survey of 112 California hospitals participating in Health Care Without Harm's *Healthy Food in Health Care Program*; 85 hospitals responded representing a 75.8% response rate.

III. Background

A. The Alternative Food Movement Goes to the Hospital

An emerging network of hospitals, health care professionals, foodservice directors, chefs, health professional associations, and nonprofit organizations has coalesced in what can be called the *healthy food in health care* (HFHC) movement.¹³ These actors are drawing on a growing body

¹³ I identify the phenomenon of alternative food efforts in the health care sector as the *healthy food in health care* movement in keeping with Health Care Without Harm, a non-profit coalition under which seven organizations are leading the movement in various regions of the country.¹³ I have been directly involved with the Health Care Without Harm coalition through a member organization, San Francisco Bay Area Physicians for Social Responsibility. I was hired as an independent consultant and then Senior Program Associate in 2011 and 2013

of scientific data on the public health impacts of conventional, industrial food production, distribution, processing, and consumption to make both moral and economic claims for the involvement of the health care sector in food system change. As just one example, they assert that the health care sector treats the downstream health burden of agricultural pesticide use in the form of rising rates of cancers, neurodevelopmental and reproductive disorders, asthma, and Parkinson's (Sutton et al. 2011). HFHC advocates argue that the industrial food system, driven by "efficiency, durability, and marketability," has resulted in negative health, social and environmental outcomes, including the proliferation of antibiotic resistant bacteria; neurodegenerative diseases, cancers, asthma, and water contamination associated with pesticides; and the loss of small and mid-size family farmers (Schettler 2004), as well as greenhouse gas emissions, rising rates of chronic diseases like obesity and diabetes, and increased incidence of foodborne pathogens (Harvie et al. 2009).

HFHC advocates are leveraging this data to inspire and legitimize new health care food procurement initiatives aligned with alternative agrifood goals. In putting their ideals into action, hospitals are seeking out food that is local, organic, fair trade, whole rather than processed, produced by family farmers, and free of a host of agricultural technologies such as antibiotics, growth hormones, and genetic modification. They are also hosting farmers' markets on hospital grounds and building relationships with farmer cooperatives, food hubs, and regional distributors and processors (Harvie 2006, Sachs and Feenstra 2008, Sirois et al. 2013).

Since 2005, over 460 hospitals and health systems have signed onto a *Healthy Food in Health Care Pledge* generated by the nonprofit coalition Health Care Without Harm which states 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" (HCWH online-e). This framing has spread dramatically within the health care sector. It has been endorsed in policy statements issued by the American Medical Association, American Public Health Association, and American Nurses Association, among others, and it forms the basis of the *Healthy Food Challenge* of the Healthier Hospitals Initiative developed in 2011 by thirteen of the most influential health systems in the country (HHI online). The hundreds of hospitals participating in the *Healthy Food in Health Care Pledge* and the *Healthy Food Challenge* represent approximately ten percent of the nation's over 5,000 hospitals (www.AHA.org).

This *turn toward quality* represents a movement from the *industrial* world, with its focus on standardization and the logic of mass commodity production, to *domestic* and *civic* worlds, where "trust, tradition and place support more differentiated, localized and ecological products and forms of economic organization" (Goodman 2003, p. 1, Morgan, Marsden and Murdoch

respectively. Participatory research theory has provided the necessary framework to guide a self-reflexive relationship to my engagement in the subject of my research (Minkler and Wallerstein 2003, Cornwall and Jewkes 1995).

2006). My survey of 85 California hospitals participating in the *Healthy Food in Health Care Program* found that 91 percent purchase some local and/or sustainable food, including, *inter alia*, organic (62%), rBGH-free dairy (73%), and animal products raised without antibiotics (48%). A 2012 trade journal survey of hospital foodservice directors demonstrates that these trends are sector-wide; of fifty hospitals surveyed, 30 percent report purchasing some organic products in the previous year, and all report purchasing local foods (FSD 2012).

Ostensibly, hospitals provide an opportunity to combine the market power of large-scale purchasing with the moral concerns of alternative consumers. Even small shifts in hospital purchasing may have meaningful impacts within the food system. A single hospital can have an annual food budget of \$1 to \$7 million or more (FSD 2011), while the health care sector as a whole spends approximately \$12 billion annually on food and beverages (Harvie 2006). Ideologically, the majority of hospitals in the U.S. are nonprofit, mission-driven organizations (www.AHA.org), and there is an underlying assumption within the sector that hospitals can and should act as advocates of positive change. As the American Medical Association asserts, “Hospitals should become both models and advocates of healthy, sustainable food systems that promote wellness and that ‘first do no harm’” (AMA 2008). Given the moral and cognitive authority granted to health professionals, this adds a layer of cultural and political significance to the health care sector’s alternative agrifood efforts not found in other farm to institution sectors.

B. GPOs and Alternative Food Procurement

There are indications that GPOs are responding to market trends and to their customers' interest in sustainable and local foods. For example, the GPO FoodBuy (a division of Compass Group, the largest foodservice contract company in the world) has developed purchasing standards for sustainably-farmed shrimp in collaboration with the Monterey Bay Aquarium’s Seafood Watch program, and the GPO MedAssets offers organic options through a collaboration with independent distributor United Natural Foods, Inc. In 2006, *FoodService Director Magazine* noted that organic food purchasing “appeared on GPOs’ radar screens” as a result of members' requests, prompting two of the top firms to compile portfolios of organic product lines. They further noted that one of the largest GPOs, Novation, was exploring ways to identify and create purchasing agreements with local farmers (FSD 2006).

The highly consolidated structure of GPO-governed food commodity networks points to the potential conventionalizing effects of their shifts toward alternative food procurement. The industry is highly oligopolistic; although over six hundred GPOs are in operation, the six largest account for almost ninety percent of all GPO-negotiated hospital purchases (GAO 2010). The largest GPOs represent thousands of hospitals and health care sites. The two largest by number of covered hospitals and purchasing volumes, Novation and Premier, account for sixty percent of the market. Other market-dominant GPOs include MedAssets, HealthTrust, AmeriNet and InSource. Critics claim that GPOs hold disproportionate influence over both buyers and sellers, serving to consolidate their own market power and generate excessive profits (Sethi 2009). According to a 2002 article in *Healthcare Purchasing News*, GPOs are the “strongest, the most

profitable, and in the best position regardless of the state of the market” among all health care food supply chain players (Werner 2002).

Although the first health care GPOs emerged in the early 1900s, their status as market dominant entities dates to the 1980s when changes in Medicare, Medicaid and insurance company reimbursement structures led to increased cost containment pressures on hospitals and health systems (Pritchard 2012). In 1987, GPOs were granted exemption from federal anti-kickback and antitrust legislation with the intended goal of promoting their ability to assist hospitals in negotiating with suppliers, leading to rapid industry growth (Sethi 2009).¹⁴

GPOs negotiate product prices and procurement. They contract with *broadline distributors* which provide services such as product sourcing, storage, and distribution. Broadline distributors service a wide variety of accounts with a wide variety of products as opposed to distributors that focus on specific categories like produce or on specific markets like restaurants. Broadline distributors' online catalogues offer the ultimate in one-stop-shopping with an enormous range of products from frozen peas and pre-made pies to table linens and microwaves. There may be a high degree of choice within individual product categories, for example, ten different types of hamburger patties may be offered or onions may be available diced by the quarter-, half-, and three quarters-inch.

Broadline distributors source both food and foodservice supplies from producers, manufacturers, wholesalers, and other distributors, store these products in regional warehouses and deliver them to institutions in bulk loads (Sachs and Feenstra 2008). Hospitals typically receive shipments from their broadline distributor three to five days per week, and the majority of items can arrive at the hospital within twenty-four hours of ordering. Most products are pre-processed and ready to serve, for example, pre-washed lettuce mixes or heat-and-serve lasagna trays.

Exemptions from anti-trust regulations have allowed GPOs to create sole-source contracts with broadline distributors, leading to consolidation in the supply chain. In foodservice, the largest GPOs have moved to two to three-year sole-source contracts with just two national broadline distributors, US Foods and Sysco.¹⁵ Thus, in accordance with hospital-GPO, most hospitals spend the majority of their food budget through a single distributor. The GPOs Premier and Novation are contracted with US Foods (Sachs and Feenstra 2008). According to a 2005 article in *Food Management*, this has “technically given [US Foods] a sole-source relationship with facilities controlling as many as two-thirds of all acute hospital beds [in the country]” (Lawn 2005). However, some GPOs such as Amerinet and MedAssets maintain a more flexible sourcing model, contracting with multiple distributors.

¹⁴Amendments to the Medicare and Medicaid Patient Program Protection Act (Public Law 100-93, section 14).

¹⁵ As of December 2013, Sysco announced acquisition of US Foods. After the merger, it will account for a quarter of the American market (The Economist 2013).

As a result of exemptions from anti-kickback legislation, GPOs are allowed to charge administrative fees to producers and manufacturers. These fees represent the bulk of a GPO's revenue. After covering operating costs, a portion of administrative fees charged to vendors are typically distributed to hospitals as rebates. GPO rebates offer financial incentives to hospitals to fulfill their contract purchasing percentages. Although the categories and tiers of a rebate system can be very complicated, in general, the greater the volume of GPO-contracted items hospitals buy, the higher the rebates (Johnston and Rooney 2011, Pritchard 2012). GPO contracts also typically offer bundled discounts that allow hospitals to pay a lower price for several products purchased together from the same supplier than when purchased separately.

The exemptions have come under a great deal of public scrutiny in the past decade. Critics point out that the administrative fees could create conflicts of interest that impede GPOs' ability to choose the best, least-cost products for health care institutions, since the groups are being funded by the companies that they are supposed to evaluate objectively and their profits are tied to the volume of sales generated (Bogdanich 2002, Sethi 2009). A series of Congressional hearings resulted in a voluntary, industry-defined Code of Conduct, while three bills seeking to regulate potential antitrust behavior in the industry have not come to fruition (GAO 2010).

The structure of GPO-governed health care commodity networks raises a number of important questions that are explored below. Is it possible for alternative food procurement initiatives to integrate with a commodity network governed so strongly by norms of efficiency and standardization without losing the robustness of their underlying values and goals? Given that the HFHC movement and conventional hospital food procurement systems are guided by divergent underlying values which shape different modes of speaking about, understanding, and defining what constitutes *good* food, how do advocates ensure that GPOs and their corresponding distributors are speaking the same language when they respond to hospital demand by offering *local* and *sustainable* products? What types of greenwashing threats arise, whereby companies market and promote *green* or *sustainable* products without a substantial commitment to positive environmental change?

IV. Analysis

Hospitals report that the sustainable food options available to them through their GPOs are extremely limited, thus, the vast majority of local and sustainable food procurement is occurring outside of the GPO-hospital relationship. Currently, most local and sustainable food procurement is part of the allowed ten to twenty percent off-contract purchasing. Often, these efforts are dependent on hospitals seeking out and developing contracts directly with local and regional producers and distributors. As one hospital nutrition director notes, "[GPOs] are starting to take heed. But quite honestly, they are really slow and there isn't enough. That's why we are going off the trail to suit our needs" (Ramsey and Schilling 2011).

Yet, the majority of foodservice and purchasing directors I interviewed stated that they would eventually like local and sustainable items to come through GPO channels due to the preferred pricing and efficiency of the procurement process. Of thirty-six interviewees, only three

envisioned greatly reducing their reliance on their GPO or removing foodservice from the hospital's overall contract in order to achieve their new food goals.

Hospitals seeking to source sustainable and alternative foods through GPO-governed commodity networks face a variety of obstacles and opportunities. Four main issues are discussed in detail below: the role of foodservice in relation to the overall GPO contract; supply chain members' conflicting definitions of local and sustainable food; transparency, or lack thereof, in hospital food supply chains; and food procurement pathways from farm to hospital.

A. GPOs and Foodservice

In relation to other hospital supplies, food is a relatively minor part of the overall GPO contract. Foodservice typically represents less than six percent of an acute care facility's contracted expenditures (Lawn 2005) as opposed to categories such as pharmaceuticals and medical supplies.¹⁶ This presents both drawbacks and benefits for hospitals with alternative food procurement goals.

One drawback is that GPOs may not have a great deal of economic incentive to devote time and resources to developing new sustainable food options. As one Hospitality Services Director states, "the GPO doesn't truly care about food because it's not the bulk of their volume. For the amount of time they have to spend on it, they don't want to be involved, truly. That's the feeling they give and that's reality" (Interview #32 2011).

A potential benefit of the minor status of foodservice in relation to the overall GPO contract is the possibility for increased purchasing flexibility given that the foodservice department is under less scrutiny from hospital administration as a cost center. For example, the above Hospitality Services Director went on to explain that a *philosophy* of compliance with GPO contracts may pose more of a barrier to shifting food purchasing than actual cost considerations:

It's always a philosophical point of difference, meaning [the hospital administration] doesn't want anyone to deviate from the system because if they let me buy local eggs, why not let surgery buy local medical equipment, even though my eggs are \$10,000 a year and their equipment is \$10,000,000 a year. It's a . . . philosophical stance – we will be compliant. That's the main barrier. (Interview #32 2011)

In hospitals with greater administrative buy-in to the goals of HFHC initiatives, foodservice directors I interviewed report a higher degree of flexibility in negotiating the terms and details of

¹⁶ For example, Novation reports *dietary/foodservice/nutrition* as only 2 percent of its overall contracting, in relation to other categories including pharmaceuticals (37%), medical/surgery, (22%), and physician preference items (cardiology and orthopedics) (16%) (HPN 2011).

their GPO contract. One Foodservice Director at a hospital leading the charge on local and sustainable purchasing urges hospitals to remember that they are the GPO's customer, not vice versa. GPO contracts are a guideline for purchasing, not a legally binding quota. A GPO's main recourse to addressing non-compliance is simply notifying a hospital about unrealized rebate opportunities; therefore, a hospital willing to place sustainability attributes above cost and contract considerations has some latitude to create change. Moreover, while hospitals typically sign a GPO contract based on three-year term durations, they may be terminated at any time, typically with sixty to ninety days' notice (Johnston and Rooney 2011).

The above Director reports renegotiating her contract by decreasing the overall spending expected through the GPO in order to allow a greater percentage of purchasing outside of the GPO relationship:

You determine as a foodservice director how much you're able to spend in each category, not the other way around. I think there's language [in the GPO contract] that you have to meet around 85 percent of your total food spend through the contracted distributor, but that's 85 percent of what you're able to buy through US Foods. So it's really fluid. And that's where I get kind of irritated with my peers. . .it's your 85 percent, you decide what it is. This is where it all comes down to those compliance reports that says either you're compliant or not in your spend. That's really what a CFO would look at. If you're setting your own numbers, you should be able to be compliant. And so, if you're compliant, you'd get your rebate check.

(Interview #31 2011)

Demonstrating the possibility for purchasing flexibility, when this director's contract came up for renewal, she chose to decrease the targeted overall spend of on-contract items by, for example, removing the cost for certain product categories like dairy, bakery and produce from the contract commitment altogether.

Perishable Foods

The majority of HFHC efforts to date have focused on perishable product categories like dairy, bakery, and produce. The perishability of these foods presents a challenge to the highly centralized model of distribution preferred by GPOs' contracted broadline distributors because they cannot be easily aggregated, stored, and distributed (Pritchard, 2012). As other scholars have noted, the biological nature of food and the ecological nature of its production have historically posed barriers to industrialization (Mann 1990, Boyd et al. 2001). This introduces another point of flexibility in relation to GPO contracts. Perishable categories represent only 4 to 9 percent of total GPO food spending while storable foods like frozen meat and dry/canned goods represent up to 39 to 73 percent (FSD 2006). The commodity networks for perishable goods have remained more regionalized (Kaufman 2000), allowing hospitals greater potential to contract with local or regional suppliers and distributors. Hospitals participating in HFHC efforts report a great deal more difficulty accessing local or sustainable meat, poultry, and grains;

these categories are marked by a much higher degree of supply chain concentration (Hendrickson and Heffernan 2007).

B. Defining Local and Sustainable

Given the divergence of underlying values between the HFHC movement and conventional hospital food procurement systems, discrepancies between GPOs, distributors, and movement advocates in relation to evaluating what constitutes a good or satisfactory product are to be expected. If definitions of what counts as local and sustainable are not aligned among all players, the environmental and social goals of participating hospitals are unlikely to be met and threats of greenwashing on the part of GPOs and distributors are raised.

Typically, according to vendor specifications, an apple is just an apple. For example, most of Sysco's 185 regional operating units in the United States offer only two varieties, Red Delicious and Golden Delicious (Cantrell 2010). Participants of the HFHC movement, however, argue that not all apples are created equal - that a product's path through the food system results in particular health and environmental benefits or costs. An *organic* apple or a *local* apple may be a distinctly different and more satisfactory product. One way this comes into play is in relation to GPO contract waiver provisions. The provisions state that if a GPO is not able to supply a given product, hospitals are granted waivers to source a non-contract item. "You can get really creative," notes a Foodservice Director in a mid-sized hospital, "because the supplier generally doesn't supply organic or local [foods]" (Interview #31 2011). By stating that a local gala apple is different from a conventional gala apple, a hospital may be granted a waiver to purchase that product off contract.

1. Defining "sustainable"

The nonprofit organizations coordinating the HFHC movement have largely defined sustainable food according to a vetted list of third-party certified foods such as *organic* and *fair trade* and those with federally regulated label claims such as *produced without the use of rBGH* or *produced without the use of added hormones*.¹⁷ Many hospitals report relying on these definitions as their criteria for sustainable food. In these cases, there is no need for GPOs, distributors, and hospitals to work to come to agreement on definitions of sustainable products since the process of determining what constitutes, e.g., *organic*, has already been set by regulatory authorities.

There are tensions and trade-offs involved in using certifications and label claims as a measure of what counts as sustainable. It is debatable the extent to which national and international certifications uphold the diverse social, environmental, community, and health ideals hospitals are aiming for in their sustainable food efforts. In an attempt to coordinate national efforts, however, advocates recognize both their own and hospitals' resource limitations in terms of sourcing and verifying food according to a more complex set of criteria. In other words,

¹⁷ See www.healthyfoodinhealthcare.org and <http://healthierhospitals.org/hhi-challenges/healthier-food>

industrial norms of efficiency, standardization, and reliability have, in part, shaped HFHC definitions of what counts as sustainable food.

The case of organic food is one example. Some argue that the standardization inherent in the certification process, whereby a narrow set of measurable and verifiable criteria come to stand for *organic*, leads to a shallow sustainability where producers can be certified organic to the letter of the law, yet practice an input-driven, monoculture-based agriculture that mimics industrial agricultural norms of efficiency, standardization, bureaucratization, and price competitiveness (DeLind, 2000; Reynolds, 2004; Guthman, 2004). However, HFHC advocates assert that organic agriculture offers public health and social justice benefits through decreasing or eliminating consumers' and farm workers' exposure to toxic pesticides (Harvie et al. 2009, Sutton et al. 2011).

As another example, the national *Healthy Food in Health Care* guidelines created by Health Care Without Harm (HCWH online-d) cite Marine Stewardship Council as a sustainable seafood certification, yet it has been critiqued in terms of the transparency and accountability of its certification process (e.g. Iles 2007). However, HFHC hospitals and advocates are often involved in more robust sustainability efforts on the regional level. For example, New England actors have partnered with the Northwest Atlantic Marine Alliance which has an evolving definition of *ecologically appropriate seafood* that takes into account a range of conditions that a set certification can't capture, such as the scale of demand and the state of the ecosystem. As one nonprofit advocate remarks, "Obviously these criteria are not easy to put into a Request for Proposals [from vendors]" (HCWH 2013).

2. Defining "local"

Defining what constitutes local food raises even more vexing questions both within hospitals and between hospitals and other commodity network players. *Local* is a contested construct with no regulated definitions. Aligned with the popular concept of *food miles*, hospitals tend to define local in terms of geographic distance, for example *produced within 200 miles of the hospital* or *produced within the state*. This focus on proximity is the flattest reading of what constitutes local foods, as it does not take into consideration ownership structure of farms or agricultural production methods. While participating foodservice directors may envision supporting small-scale family farmers and local economies,¹⁸ ascertaining the distance between a producer and a hospital is no guarantee that it embodies those values. However, my research found that hospital efforts tend to align more with alternative agrifood goals, either through direct sourcing from independent farmers, working with food hubs or other supply chain intermediaries that incorporate social and environmental values in their mission and practices, or partnering with family-farm-based organizations.

¹⁸Taste, quality, and supporting local economies tend to rise to the top of stated motivations for prioritizing local procurement in schools and hospitals (Feenstra et al. 2011, Bagdonis et al. 2009, Vogt and Kaiser 2008).

3. Aligning definitions

A further concern is aligning definitions of local food throughout the supply chain. Broadline distributors are increasingly responding to customers' demands for local food, but hospitals have found major discrepancies between movement and distributor definitions. On the list below, for example, US Foods denotes Pepsi-Cola and Unilever products as local because they come from nearby processing plants or distribution warehouses. At best, these are cases of discordant conceptions of sustainability, at worst, they are greenwashing.

PRODUCT DESCRIPTION	GROWER/PRODUCER	CITY	STATE	DISTANCE
JUICE, PRUNE 100%	OCEAN SPRAY INC	HENDERSON	NV	211
WATERMELON, SEEDLESS FRESH	UNITED MELON DIST. INC	LOS ANGELES	CA	41
DRINK, SODA COLA DIET PEPSI	PEPSI-COLA	RIVERSIDE	CA	13
ICE CREAM BAR, OREO	UNILEVER ICE CREAM	HENDERSON	NV	211
BEAN, GARBANZO	TEASDALE QUALITY FOODS INC	ATWATER	CA	295
CHICKEN, BREAST RAW FROZEN	GOLDEN WEST TRADING INC	VERNON	CA	40
PEACH, PUREE	KEN'S FOODS INC	LAS VEGAS	NV	199
ICE CREAM CUP	UNILEVER ICE CREAM	HENDERSON	NV	211
WATER, PURIFIED, PLASTIC BOTTLE	NESTLE WATERS N.A.	ONTARIO	CA	12
POPSICLE, SUGAR-FREE, FROZEN	UNILEVER ICE CREAM	HENDERSON	NV	211
FLOUR, SELF RISING	GENERAL MILLS INC	LOS ANGELES	CA	40

Figure 2 - US Foods list of 'local' foods generated for a California hospital

Two advocate organizations involved in the HFHC movement, Practice Greenhealth and Health Care Without Harm, have recognized the importance of aligning definitions between hospitals and GPOs. To that end, they have developed a set of suggested sustainability contract conditions for GPOs. These Environmentally Preferable Purchasing Food Guides detail environmental disclosure questions that can be included in RFIs (requests for information) and RFPs (requests for proposals) to vendors in order to help inform purchasing decisions.¹⁹

There are also indications that GPOs are seeking out movement-based definitions of sustainability. For example, foodservice directors active in the HFHC movement have been invited to present to GPO and distributor representatives, and many of the major GPOs are

¹⁹ See www.healthyfoodinhealthcare.org/resources.php?pid=121, and purchasing guides available at www.healthyfoodinhealthcare.org, including *Increasing the Availability of Sustainable Food Options via GPOs and Distributors*.

members of Practice Greenhealth, a membership based nonprofit organization focused on environmental solutions in the health care sector (Interview #68 2012).

C. Transparency and Communication

Potential discrepancies in evaluating and defining which characteristics of food products count and what constitutes *good* food are relevant in relation to what information GPOs and distributors communicate about a product, how that information is communicated, and the possibility that greenwashing may occur, particularly since the qualities of production and distribution hospitals in the HFHC movement are concerned with are credence characteristics that cannot be discerned by looking at the food itself; they must be signified throughout the supply chain through labels or other forms of tracking. Guaranteeing credence characteristics throughout the supply chain depends on a high degree of transparency and verification.

Transparency, however, is not necessarily a value embedded in GPO-governed commodity networks. Health care executives have charged that in an effort to retain control of pricing, GPOs frequently go to great lengths to keep hospitals in the dark about certain aspects of pricing (Werner 2002). When asked how the pricing and rebate system works, one foodservice director I interviewed replied, "With our GPO it's not clear cut to us at all, it's always been, 'what exactly is the price?'. . . Moving forward, we want transparency" (Interview #29 2011).

Online catalogues are the predominant tool GPOs and their corresponding distributors use to communicate product attributes to hospitals. Hospitals report that finding sustainable products in ordering catalogs can be difficult. Products that align with hospitals' sustainability criteria may not be labeled as such, and the technology platforms may have poor search capabilities in relation to these criteria. This limits hospitals' ability to access sustainable foods as well as their ability to track and report their progress.

HFHC hospitals are pushing for increased transparency and communication of their requirements in a variety of ways. One way is through the RFI (Request for Information) process used to solicit product information from suppliers. A GPO, at the behest of its member hospitals, could request relevant sustainability information through the RFI, such as information on a company's policy on local produce and how it verifies the source and production method of the produce it carries. The RFI can also be used as a tool to encourage a distributor to look for products it does not currently sell and to set a timeline for making them available (Sachs and Feenstra 2008).

Kaiser Permanente, for example, recently released a *Sustainable Food Scorecard* to use in evaluating potential food and foodservice vendors' ability to support their sustainable food purchasing goals. Potential vendors are scored based on the vendors' distribution practices, their ability to track and report sustainable purchasing, and the selection of products they offer that meet the health system's Sustainable Food Criteria, which were modeled after Health Care Without Harm's *Green Guide for Health Care*. Given the size and scope of Kaiser's food procurement, the Scorecard may have ripple effects throughout the industry, opening supply

chain channels for local and sustainable products and forcing distributors to revamp their IT systems in order to accommodate new tracking and transparency goals, such as the ability to communicate farm name and production practices throughout the supply chain, not just price, brand, and product weight, as is currently the case.

Most GPOs make contract decisions with the help of committees comprised of representatives from their member hospitals and health systems. Although not all perspectives are heard on these committees since smaller hospitals are often not represented (Pritchard 2012), hospitals interested in new procurement initiatives can ask that environmental or health attributes of food products be considered during the bidding and contracting processes. Hospital members of the HFHC movement have brought sustainability concerns to light by serving on these GPO advisory committees (Interview #42 2011)

D. Food Procurement Pathways

In response to consolidation within GPO-governed commodity networks, industry analysts see an emerging counter-trend toward regional contracting in the health care sector; "transparency, savings and control have been powerful enticements to many who felt that the nationals were growing ever more opaque, unwieldy and divorced from local and regional needs" (Pritchard 2012, p.61). Pritchard predicts an increase in regional purchasing coalitions of hospitals and health systems focused on handling local needs by voluntarily combining volume to access better pricing through their GPO or directly with suppliers. The examples below demonstrate this trend in relation to hospital food procurement.

Local and regional procurement presents the steepest challenge to the HFHC movement but has been the source of the greatest amount of supply chain innovation. In the popular imagination as well as in the literature on the local food movement, there is a great deal of emphasis on direct relationships between farmers and customers with the resulting benefits of cultivating consumers' attachment to place, increasing the percentage of the food dollar that goes to farmers, and building trust through face-to-face relations (Lyson 2004, Feenstra 1997). Although a handful of hospitals have set up direct purchasing agreements with farmers, on the whole, the direct farm-to-customer structure typical within the local food movement is not feasible for large institutions. Due to the logistical realities of mass-feeder foodservice as well as federal dietary and food safety policy, hospitals rely on intermediaries that can process, pack, grade and deliver products in high and consistent volumes (Klein 2012a, Sachs and Feenstra 2008). The broadline distributors used by GPOs, like Sysco and US Foods, excel in this regard. Yet, they guarantee a steady supply and large volume by sourcing mass-produced commodities through national and international supply streams (Cantrell 2010). Smaller-scale producers report facing a number of barriers to getting their product "on the Sysco truck," including volume and food safety requirements, pricing structures, and the prohibitive cost of insurance (Salatin 2011).

Likewise, GPO's purchasing structures may limit points of access for smaller-scale local and regional producers. "In all the hospitals that Novation serves," remarked one hospital Foodservice Production Supervisor, "what incentive [does the GPO] have to spend thousands of

dollars in time to talk to the local farmer down the street, and not only help contract with that farmer, but help get that farmer into US Foods, which is another whole dynamic. . . The challenge in getting that product through the door may not make it feasible" (Interview #46 2011).

Although there is no data available related to food, in the field of medical supplies smaller-scale manufacturers of safety needles and oximeters have been shut out of GPO-governed supply streams as a result of both the emphasis on contracts with large manufacturers that can bundle goods and the administrative fees GPOs charge, which smaller players may not be able to afford (Bogdanich 2002, Sethi 2009).²⁰

Hospitals are therefore turning to farmer cooperatives and *food hubs* that purposefully aim to combine industrial values of efficiency and standardization with alternative social, health, and environmental values. Food hubs manage the aggregation, distribution, and marketing of source-identified food from local and regional producers to help them meet wholesale, retail and institutional demand (Barham et al. 2012). One example is the success of Michigan hospitals sourcing through Detroit Eastern Market with the help of the Ecology Center, a member organization of the Health Care Without Harm coalition. Another model is Local Orbit, an online food hub which handles the logistics of aggregating product from multiple farmers to meet institutional demand. Puget Sound Food Network has serviced Seattle hospitals using this service.

Because of their values-based mission, food hubs offer assurance that the products they offer align with hospitals' procurement goals. However, food hubs often struggle to achieve the consistency in supply that hospitals are accustomed to, and the majority do not have the capacity to offer minimally-processed products like fresh-cut green beans or pre-washed lettuce that are often central to institutional food provisioning (Personal communication 2013a)

The examples below point to innovative attempts to overcome the scale and values dilemma of institutional procurement in relation to local and regional purchasing. They demonstrate the emergence of disaggregated models based on creating new supply chain relationships that offer food embodying alternative values as well as some degree of standardization, efficiency, and affordability. The majority of these are occurring outside of the hospital-GPO relationship.

Hospitals and nonprofit organizations in the HFHC movement have realized the efficacy of creating regional purchasing alliances around a common goal. As one example, a regional collaboration of hospitals led by Health Care Without Harm and Maryland Hospitals for a Healthy Environment succeeded in getting a new brand of chicken that is Certified Humane Raised & Handled and produced without the use of antibiotics or arsenic on their GPO contract with Premier (Secret 2011). In cases where a targeted item is not available on contract,

²⁰ For an industry response to these claims, see reference to Lawton Burns study in (HSCA online).

hospitals are leveraging their demand by contracting directly with broadline distributors, which can manage and deliver products in smaller quantities in ways that GPOs are not designed to do (Pritchard 2012). For example, a team of four California hospitals led by Health Care Without Harm and San Francisco Bay Area Physicians for Social Responsibility went off contract to secure an alternative liquid egg supply.²¹ As a result of their combined demand for over 91,000 pounds of liquid eggs annually, they were able to get a mid-scale farmer's products "on the US Foods truck." They are now sourcing cage-free, humane-certified eggs from a family farmer in Washington through US Foods.

Larger hospitals and health systems may command enough purchasing power on their own to shift supply chains. As one foodservice director explains:

I decided that US Foods couldn't get the chicken that I wanted through the Novation contract. It just didn't exist because all the Novation-contract chicken potentially [was produced with] arsenic and antibiotics. . .[US Foods] went off contract and found us some chicken and brought it in for us. . .in the end, carrying that product was better than staying on contract for them.
(Interview #31 2011)

Alliances between broadline distributors and regional companies or cooperatives are another emerging pathway. In a pilot project aimed at increasing their local food offerings, Sysco partnered with regional produce company Walsma & Lyons (Barham et al. 2012, Cantrell 2010). As another example, Fifth Season Cooperative in southwestern Wisconsin formed an innovative alliance with Reinhardt Foodservice, a Midwestern broadline distributor, in order to serve their university and hospital clients (Chapeta 2012).

V. Conclusion

Despite the rapid growth of the HFHC movement, alternative food procurement initiatives in the health care sector will remain a side note to the bulk of hospital food procurement unless the relationship between hospitals and GPOs can be leveraged to increase sustainable options or renegotiated to increase flexibility in purchasing.

To date, the vast majority of hospitals' alternative food procurement initiatives are occurring outside of the hospital-GPO relationship, but there has been increasing activity on the part of GPOs, hospitals, and nonprofit organizations involved in the HFHC movement in sourcing alternative food through GPOs. If new procurement goals are to be achieved through GPO-governed commodity networks, serious concerns related to transparency, alignment of definitions, and supply chain structure will need to be addressed. Hospitals should be clear about their goals for new procurement initiatives, at times pushing for new options through their GPOs

²¹ Liquid eggs, which are pre-separated from their shells, are commonly used in institution and restaurant kitchens and constitute the majority of hospital egg purchases.

and at others sourcing “off the beaten path” from supply streams that embody their stated vision and values.

GPOs and their corresponding broadline distributors hoping to meet new hospital demands will need to rethink their one-size-fits-all model which offers each member hospital the same Red Delicious apple devoid of quality characteristics other than price and weight. Likewise, innovative food hubs may need to partner with or learn from existing supply chain intermediaries in order to meet the efficiency and standardization constraints of institutional purchasers.

Some leading hospitals provide models of new supply chain relationships that incorporate both industrial values of efficiency and standardization and environmental, health, and social values. It remains to be seen whether these models will be taken up more broadly within the health care sector, however, as they often require hospital foodservice directors and staff to go above and beyond in terms of planning, participation, and at times, cost.

While leading hospitals can play an important role in pointing toward a reformed food system, many supply side barriers to the development of new food initiatives are not simply obstacles to overcome but indications of powerful economic and political forces aligned, either actively or passively, in support of the status quo. Without public policy setting the conditions for a food system that guarantees a range of social, health, and environmental benefits, hospitals working to achieve HFHC goals will face an uphill struggle.

Chapter 6

**The Farm Fresh Healthcare Project:
Analysis of a Hybrid Values-based Supply Chain**

Kendra Klein and Ariane Michas²²

Abstract

Local food movement advocates are increasingly looking to institutional purchasers like hospitals, schools and colleges as a means to scale up local food systems. Unlike the direct farm-to-customer models of farmers' markets and Community Supported Agriculture, institutional purchasers typically rely on supply chain intermediaries like distributors and processors in order to meet the logistical constraints of their foodservice operations, including the need for large and consistent volumes, pre-processed products, product standardization, and food safety requirements. An emerging literature on *values-based supply chains* offers various models for meeting both the scale-based requirements and values-based goals of *farm to institution* initiatives. These models seek to incorporate conventional supply chain norms of efficiency, standardization, and affordability while meeting the diverse values motivating the local food movement such as mutual benefit between supply chain members, transparency, environmental stewardship, and social equity. To date, values-based supply chain models have largely been derived from cases of farmer cooperatives, food hubs, and food distributors that have purposefully designed their operations to incorporate alternative agrifood movement goals and values. A model that deserves more attention is *hybrid* values-based supply chains that incorporate both conventional and alternative resources, infrastructure, and markets. The few studies that have examined hybrid models come to contradictory conclusions as to whether the involvement of conventional intermediaries in values-based supply chains is beneficial or detrimental to the local food movement. Some point to benefits such as established supply chain relationships, expertise, and infrastructure that match the needs of institutional purchasers while others argue that conventional intermediaries reproduce marginalizing structures of mainstream supply chains. This paper explores these contradictions through analysis of the Farm Fresh Healthcare Project (FFHP), a farm-to-hospital initiative in the San Francisco Bay Area that engages a set of hospitals' existing regional produce distributors to supply products from local small and mid-size family farmers. By engaging conventional intermediaries, the project was able to benefit from existing supply chain infrastructure shaped by norms of efficiency, standardization, and affordability. The central question this analysis seeks to clarify is to what extent FFHP actors succeeded in embedding a range of non-economic values in their supply chains including transparency, communication of qualities of provenance and production throughout the supply chain, decision-making equity between supply chain members,

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environmental stewardship, and social equity in the form of supporting small and mid-size family farmers.

Keywords: farm to institution, farm to hospital, values-based supply chains, local food movement, agriculture of the middle

I. Introduction

Local food movement advocates are increasingly looking to institutional purchasers like hospitals, schools and colleges as a means to scale up local food systems. Unlike the direct farm-to-customer models of farmers' markets and Community Supported Agriculture, institutional purchasers typically rely on supply chain intermediaries like distributors and processors in order to meet the logistical constraints of their foodservice operations, including the need for large and consistent volumes, pre-processed products, product standardization, and food safety requirements (Feenstra et al. 2011, Vogt and Kaiser 2008).

An emerging *values-based supply chain* (VBSC) literature offers various models for meeting both the scale-based requirements and values-based goals of farm-to-institution initiatives. These models seek to incorporate conventional supply chain norms of efficiency, standardization, and affordability while meeting the diverse values motivating the local food movement such as mutual benefit between supply chain members, transparency, environmental stewardship, and social equity (Stevenson and Pirog 2008, Feenstra et al. 2011, Diamond and Barham 2011). While the local food movement literature has largely focused on civic values of trust, connection, and social equity (Lyson 2004, Sage 2003), the VBSC literature also incorporates industrial and commercial values of efficiency, standardization, and scale, which are key to addressing the challenges institutional procurement poses to the expansion of local food systems.

At the heart of redefining *value* in values-based supply chains is the incorporation of factors other than price in supply chain coordination, including social, health, and environmental values (Stevenson and Pirog 2008, Feenstra et al. 2011, Diamond and Barham 2011). Scholars and practitioners identify the key characteristics of a values-based supply chain as communication of qualities of provenance and production throughout the value chain; creation of strategic partnerships among supply chain members; and development of trust, transparency and shared governance between supply chain members (Stevenson and Pirog 2008, King et al. 2010).

A. Hybrid values-based supply chains

A model that deserves more attention is the *hybrid* values-based supply chain that incorporate both conventional and alternative resources, infrastructure, and markets to meet the economic and non-economic goals of farm-to-institution initiatives (Lerman 2012b). To date, VBSC models have largely been derived from cases of farmer cooperatives, food hubs, and food distributors that have purposefully designed their operations based on the goals and values of the alternative agrifood movement (Lerman 2012a, Bloom and Hinrichs 2011). In contrast, this paper examines a local food system network that employs distributors that did not originate in the alternative agrifood movement.

Many local food researchers and practitioners have looked to the development of new supply chain infrastructure such as *food hubs*, which manage the aggregation, distribution, and marketing of source-identified food from local and regional producers to help them meet wholesale, retail and institutional demand (Barham et al. 2012). Food hubs offer a high degree of assurance that their supply chains embody the underlying values of the local food movement. However, many food hubs do not have the capital or capacity to offer a full range of services that institutional foodservice operations rely on. As one example, the majority of farm-to-institution efforts engaging cooperatives and food hubs have focused on whole products versus pre-processed products (Bagdonis et al. 2009, Berkenkamp 2006), yet pre-processed products such as sliced zucchini or pre-washed lettuce are central to the functioning of most institutional foodservice operations, since they may not have the kitchen or staff resources to prepare all ingredients from scratch (e.g. Sachs and Feenstra 2008, Klein 2012a, Vogt and Kaiser 2008, Izumi 2008).

By engaging conventional processors and distributors, hybrid VBSCs can offer a range of relationships, expertise, and infrastructure on which institutional purchasers depend. In addition to the capacity to offer fresh-cut and other minimally-processed products, conventional intermediaries can provide other "wheel and mortar" benefits, such as extensive aggregation and distribution systems, storage and refrigeration capacity, and ability to respond to shortages in the availability of targeted local products with other products from their warehouses. Engaging existing intermediaries also allows local food systems to tap into other efficiencies, such as "back haul" systems on distribution routes in which trucks are both dropping off product to customers and picking up product from producers and therefore never running empty. They can provide other benefits, as well, including relationships with farmers, food safety certification and assurances, insurance coverage, and IT and invoicing systems. This is doubly important because hospitals name working with an established vendor as preferable to setting up a new vendor relationship due to in-house transaction costs, both in terms of the bureaucratic systems required to add an additional vendor and the ongoing labor required to manage ordering systems for multiple vendors (Personal communication 2013b).

Yet, engaging conventional intermediaries may pose challenges to the underlying goals and values of farm-to-institution efforts, given that they typically function according to dynamics of price competition, economic efficiency, and economies of scale. The central question becomes, to what extent can conventional supply chain intermediaries be leveraged to incorporate alternative agrifood values?

Within the VBSC literature, the few studies examining hybrid models come to contradictory conclusions as to whether the involvement of conventional intermediaries in values-based supply chains is beneficial or detrimental to the local food movement. King *et al.* (2010) and Conner *et al.* argue (2011) that conventional supply chain players can benefit value chain development by providing unique assets such as processing and distribution infrastructure. Izumi *et al.* (2009) also argue for the beneficial role of regionally-based food distributors, in that they have existing relationships with local and regional farmers that can re-embed the institutional foodservice market territorially. In contrast, Bloom and Hinrichs argue that, when value chains incorporate mainstream businesses, they may reproduce equity imbalances that exist in conventional food systems, and that supply chain actors need a more deliberate commitment to

non-economic goals in order to establish successful mechanisms of coordination (Bloom and Hinrichs 2011).

B. The Farm Fresh Healthcare Project

This paper explores these tensions through a case study of a hybrid values-based supply chain called the Farm Fresh Healthcare Project (FFHP). The FFHP is a farm-to-hospital initiative in the San Francisco Bay Area that engages a set of existing regional produce distributors to supply product from local small and mid-size family farmers. While acreage or gross annual sales may help determine what counts as a small or mid-size farm, participating hospitals and nonprofit organizations are primarily interested in farm size as an issue of market and ownership structure. The concepts of *farming-occupation farms* or *large family farms* (Hoppe, Perry and Banker 2000), where farming is the chief source of income and primary occupation, are the most relevant definitions for FFHP goals aimed at supporting independent family farmers.

This study finds that the Farm Fresh Healthcare Project experienced both success and challenges in its aim to incorporate a range of local food movement ideals into existing supply chains. The project succeeded in sourcing produce from mid- and small-scale family farmers, increasing transparency and traceability to convey farmer identities throughout the supply chain, putting values-based criteria such as *organically-produced* ahead of price in purchasing decisions, and increasing communication and trust between supply chain members. The greatest challenges the project encountered were difficulties in securing full traceability throughout the supply chain due to distributor IT systems and processing logistics, barriers to the enrollment of small family farmers posed by food safety and distribution route requirements, and questions about the long-term viability and replicability of the project given its dependence on nonprofit partners external to the supply chain and its reliance on a small set of foodservice champions within participating hospitals willing to take on additional responsibilities and costs associated with the project.

II. Methods

This analysis is based on evaluation of the first year and a half of the FFHP, including interviews, participant observation, and purchasing data. The lead author conducted 11 semi-structured interviews with project participants including: 5 interviews with two produce distributors, 2 interviews with 2 farms, and 3 interviews with 2 hospitals. Interviews were recorded, transcribed, and coded according to themes: participant motivations, transparency and communication, supply chain relationships, food safety, and factors related to institutional food procurement such as processing, volume, consistency, and standardization. Participating hospitals and distributors provided purchasing data.

Both authors represent nonprofit organizations that have been leaders in the development and execution of the Farm Fresh Healthcare Project.²³ This allowed them the opportunity for in-depth participant observation in internal conference calls, emails, meetings, and the ongoing logistics of implementing the project goals. We were guided by theories of participatory action

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research which maintain that social science research can and should be conducted collaboratively with local stakeholders and with the goal of facilitating social change (Minkler and Wallerstein 2003) and which understand science as a context-dependent, socially-constructed process in which the researcher is not a neutral observer but an engaged participant (Greenwood and Levin 2007). Participatory research theory provided important tools to guide a reflexive relationship to our in-depth involvement in the subject of this evaluation.

This research is covered under IRB Protocol ID: 2010-05-1467 of the Office for the Protection of Human Subjects at University of California, Berkeley.

III. Background: The Farm Fresh Healthcare Project

The Farm Fresh Healthcare Project was initiated in the San Francisco Bay Area in August 2011. The first meeting of the FFHP brought together nonprofit partners, hospital foodservice leaders, and produce distributors at Kaiser Permanente's Oakland Medical Center. Major goals identified by the FFHP members were: 1) to work through hospitals' existing produce distributors, 2) to increase transparency in existing supply chains by tracking farmer-identified products, 3) to secure fresh-cut local produce, and 4) to source from small and mid-sized local family farmers, ideally those practicing environmentally-beneficial production methods.

The hybrid supply chain structure of the Farm Fresh Healthcare Project is the result of a learning process within a network of farm to institution actors in the San Francisco Bay Area. In particular, it can be understood as a response to the experience of a food hub called the Growers' Collaborative and a result of the maturation of existing regional distributors' interest in local food sales.

A. Project Rationale

1. Healthy Food in Health Care

The hospitals participating in the FFHP are leading members of the national *Healthy Food in Health Care Program*, which seeks to “harness the purchasing power and expertise of the health care sector to advance the development of a sustainable food system” (HCWH online-e). They are among over 460 hospitals nationwide that stand behind the *Healthy Food in Health Care Pledge*, which states 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” (HCWH online-e). San Francisco Bay Area Physicians for Social Responsibility (SF PSR) coordinates the *Healthy Food in Health Care Program* in California.

In 2006, the FFHP hospitals were among the founding members of the Bay Area Hospital Leadership Team coordinated by SF PSR, which seeks to put this vision of healthy food into practice through collaboration. The Hospital Leadership Team goals are to:

- Increase institutional procurement of healthy food for healthy bodies, farms, environment, and communities;
- Work to make food a part of the healing process in our institutions;

- Share ideas & information about products, sourcing, and systems of operation; and
- Pool purchasing power to improve access to sustainably-grown foods and to move the marketplace. (SF PSR online-b)

Prior to the FFHP, the Bay Area Hospital Leadership Team had already achieved success on alternative food procurement projects (e.g., see HCWH 2012), and two of the hospitals had won national recognition for their leadership on local and sustainable food efforts through the *Healthy Food in Health Care* awards program (Harvie et al. 2008, Sirois et al. 2013).

The FFHP benefited from a great deal of prior learning and changes to systems of operation that had occurred within and between Hospital Leadership Team members with the goal of incorporating local, seasonal foods into their menus. For hospitals, changes in food procurement hinge on menu planning, which typically involves a team of dietitians developing targeted diets for all of a hospital's patients. Changes can take weeks or months of planning and paperwork. One hospital representative noted their increased nimbleness in menu planning and related ordering processes as key to FFHP success, "In the past we've taken a whole quarter to incorporate seasonal produce. . . [but] only two weeks ago on a Tuesday I said, 'asparagus is coming on', and by Friday, our executive chef was announcing menu changes. I was blown away. You keep at it, and finally there comes a day when, hey, we're pretty good at this now" (Interview #71 2013). Another hospital representative noted that at they had synchronized cafeteria menus with order guides, so that, when the executive chef changes the menus from, e.g., winter squash to asparagus, it automatically triggers a change for the staff member coordinating online ordering (Interview #74 2013).

2. *Prioritizing local family farmers*

Prior to and during the FFHP, participating hospitals were sourcing and tracking local produce through their produce distributors, Bay Cities Produce and FreshPoint San Francisco. Both distributors developed local food programs in response to customer demand, but they rely solely on geographic distance in their definition. Bay Cities Produce uses a series of concentric zones of Local 1, 2, and 3 (Bay Cities Produce online): Local 1 refers to food produced within 100 miles of the company's warehouse in San Leandro, CA; Local 2 extends the circle to 250 miles; and Local 3 refers to food produced within the state of California. FreshPoint San Francisco distinguishes two spatial zones: produced within 150 miles of their warehouse and produced within California.

The FFHP sought to incorporate a broader set of criteria than geographic distance in its definition of local food to "define local and sustainable purchasing in a much deeper way," according to one participating hospital representative (Interview #71 2013). Definitions of local food that rely on geographic distance do not take into account ownership structure of farms or agricultural production methods. While buyers may envision supporting small-scale family farmers, local economies, and environmentally-beneficial agricultural techniques, ascertaining the distance between food production and the end consumer is no guarantee that it embodies those values (Hinrichs 2003, Selfa and Qazi 2005). This is particularly true in California where a highly industrialized form of agriculture has been dominant for over a century (Guthman 2004, Walker 2004). California's \$43.5 billion dollar agricultural economy produces nearly half of

US-grown fruits, vegetables, and nuts (CDFA online), making fresh produce grown on an industrial scale readily accessible. While *local* is often associated with an agrarian ideal, California boasts such local farms as Grimmway, the world's largest producer of carrots, processing over 10 million pounds weekly (Blatner 2012).

During the initial planning phase of the Project, a collaboration between the Hospital Leadership Team and two partner organizations, SF PSR and Community Alliance with Family Farmers (CAFF), resulted in the following definitions of local food:

- *Tier 1 - Locally produced on small to mid-scale family farms:* Farms, ranches, and production/processing facilities located within a 250-mile radius of hospital facility.
- *Tier 2 - Sustainably grown:* Carries one or more independent third-party certified label focused on sustainable production practices; USDA Certified Organic or in transition toward achieving organic certification
- *Ultimate goal:* Locally grown on small family farms using sustainable farming practices; free of toxic pesticides and genetically-modified organisms.

The intent of the criteria was to support a segment of the agricultural sector that has been identified as threatened and in need of new market opportunities (Kirschenmann et al. 2008), to support agricultural practices that are more environmentally sustainable, and to prioritize organic produce in order to decrease farm worker and hospital patrons' exposure to potentially harmful pesticides.

3. Choosing a hybrid supply chain structure

As a result of the experience of a food hub called the Growers Collaborative (GC), the FFHP set out not to “reinvent the wheel,” but to retrofit the existing supply chain to become shorter, more flexible, and more transparent. With some of the participating hospitals sourcing up to 90 percent of their fresh fruits and vegetables in processed form (e.g., sliced green beans and cubed squash), the FFHP sought to engage intermediaries that could help “crack the nut” of supplying fresh-cut product in addition to whole product.

The history of the Growers Collaborative (GC) points to some of the logistical and capital challenges associated with developing new supply chain infrastructure. In 2003, Community Alliance with Family Farmers, a nonprofit that advocates for California family farmers and sustainable agriculture, founded GC in an effort to scale up the local food system. The decision to create new food system infrastructure was influenced by a desire for transparency, traceability, and the ability to incorporate participating farmers' stories into product marketing, factors which were not perceived as possible through existing distributors at the time. GC was founded through a USDA Value Added Producer Grant (VAPG).

After success in Ventura County serving the Ventura Unified School District, Kaiser Permanente medical centers, and corporate and university cafeterias administered by Bon Appetit Management Company, the GC opened a Northern California hub in Yolo County serving UC Davis, UC Berkeley, the northern California network of Kaiser facilities, two school districts, and Revolution Foods.

Yet, even at the height of its operation, GC struggled with structural inefficiencies like limited number of vehicles which restricted aggregation capacity, and sub-par storage facilities with inadequate refrigeration space, poor drainage, and insufficient access for trucks. In addition, due to its limited scope, GC could not draw on the economies of scale and professional savvy of larger farms and could not offer the full complement of a year-round product list that its customers were accustomed to. As one participating farmer remarked, “[GC] might take two cases of tomatoes, but you need to have a bunch of other products to spread out the costs. Does it warrant the gas, the cost of the employee to deliver? [GC] was a fantastic concept, but unless you're able to provide a wide range of products like a wholesale distributor, you lose that efficiency” (Interview #78 2013). Ultimately, the challenges of scale and structure associated with setting up a parallel distribution business from scratch were insurmountable for the Growers Collaborative.

Despite its shortcomings as a business model, GC built enthusiasm, demand, and knowledge about local food within institutional foodservice in the regions it served. In addition, GC demonstrated to regional produce distributors that there was a high level of demand for local produce among their customer base. A number of these distributors began to develop local sourcing programs, in many cases approaching CAFF for technical assistance.

B. Participants

1. Hospitals

Procurement through the FFHP began in the summer of 2012 with four hospitals: the University of California San Francisco Medical Center, two campuses of John Muir Health, and the San Francisco VA Medical Center. This analysis focuses on the first year of procurement involving these four hospitals. In 2013, the FFHP expanded to incorporate three additional hospitals: Washington Hospital Health System (Fremont), San Francisco General Hospital, and Saint Francis Hospital (a Dignity Health facility in San Francisco). Kaiser Permanente has been a project member from the beginning, engaged in planning and coordination, not procurement.

2. Farms

During the first four harvest seasons of the project (summer 2012 – spring 2013), produce was sourced from three mid-scale, family farms, Coke Farms, Dwelley Farm, and Greene and Hemly Farm, and one small-scale farm, Green Solar.

Coke Farms and Green Solar Farm are both fully organic. Dwelley Farm and Green & Hemly Farm are increasingly bringing acreage into organic production as the market for organically-grown produce expands.

Farm	Acreage	Distance from San Francisco	Certification	Notes
Coke Farms	300	92 miles	Organic	Aggregates from 19 small-scale organic farms representing an additional 600 acres
Dwelley Farm	800	53 miles	Mixed organic / conventional	Plans to expand organic production
Green Solar Farm	10	~90 miles	Organic	Distributes product through Coke Farm's aggregation service
Greene & Hemly Farm	~130	82 miles	Mixed organic / conventional	

Figure 1 - Farms participating in the Farm Fresh Healthcare Project

3. Distributors

Three of the FFHP hospitals use Bay Cities Produce and one uses FreshPoint San Francisco. Both distributors source from producers and wholesalers locally, nationally, and globally based on factors of cost and supply. Bay Cities Produce is an independent, family-run produce company founded in the Bay Area in 1947. Bay Cities has its own processing facilities on-site. FreshPoint SF is a subsidiary of national food distributor Sysco. It was formerly the independent regional distribution company Lee Ray-Tarantino. FreshPoint SF does not have in-house processing capacity; they contract with Legacy, a fresh-cut processor in South San Francisco, and also bring in processed product from locations across the country.

4. Nonprofit organizations

The FFHP is driven by a collaboration between two nonprofit organizations, Community Alliance with Family Farmers and San Francisco Bay Area Physicians for Social Responsibility. In 2012, these organizations secured funding for project coordination through a Kaiser Permanente Community Benefit grant.

SF PSR coordinates the national *Healthy Food in Health Care Program* in California. Through advocacy and education, SF PSR seeks to motivate facilities to implement programs that explicitly connect all aspects of the food system with health. They “catalyze sustainable procurement efforts, create clinician advocates, and inspire health care institutions to become leaders in shaping a food system that supports prevention-based health care” (www.CAHealthyFoodinHealthCare.org).

Since 1978, CAFF has advocated for California family farmers and sustainable agriculture (www.CAFF.org). CAFF supports, creates, and leads campaigns and actions to advance the food movement. As a community organization, it strives to build shared values around food and agriculture to create strong partnerships between family farmers and their neighborhoods. These collaborations aim to create local economic vitality, improved human and environmental health, and long-term sustainability of family farms. CAFF is a membership-based organization with family farmers making up its core constituency. CAFF has worked on farm-to-hospital and farm-to-school initiatives since 2002, becoming a statewide leader in technical assistance, procurement consulting, and marketing and education.

C. Products

The chart below details the amount of FFHP sourcing that was achieved during the pilot harvest seasons, including two processed products, cut green beans and cubed butternut squash and two organic items, strawberries and butternut squash.

Product	Cut	Amount	Producer(s)	Distributor(s)	Hospital(s)
Green beans	Trimmed & cleaned, 2-inch cut, ¼ -inch cut	3,830 lbs	Dwellely Farms	Bay Cities Produce	John Muir Health UCSF Med. Center
Butternut squash <i>organic production methods</i> ²⁴	1-inch cubed	120 lbs	Coke Farms	FreshPoint	San Francisco VA Medical Center
Strawberries <i>organic</i>	Whole	8,478 lbs	Coke Farms	Bay Cities Produce Fresh Point	John Muir Health UCSF SF VA
Stone fruit	Whole	1,440 lbs	Dwellely Farms	Bay Cities Produce FreshPoint	John Muir Health UCSF SF VA
Cherry tomatoes	Whole	1 flat	GreenSolar	FreshPoint	SF VA
Apples	Whole	220 lbs	Greene & Hemly	FreshPoint	SF VA
Pears	Whole	220 lbs	Greene & Hemly	FreshPoint	SF VA

Figure 2 - Farm Fresh Healthcare Project Sourcing, Summer 2012 - Spring 2013

IV. Discussion

The Farm Fresh Healthcare Project can be understood as an example of a values-based supply chain aiming to meet both the scale-based requirements and values-based goals of participating hospitals. By engaging conventional intermediaries, the project was able to benefit from existing supply chain infrastructure shaped by norms of efficiency, standardization, and affordability. The central question this analysis seeks to clarify is to what extent FFHP actors succeeded in embedding a range of non-economic values in their supply chains including transparency, communication of qualities of provenance and production throughout the supply chain, decision-making equity between supply chain members, environmental stewardship, and social equity in the form of supporting small and mid-size family farmers.

Among the benefits of engaging conventional distributors were: taking advantage of existing distribution routes; the regularity of the distribution schedule (both distributors deliver up to five

²⁴ The butternut squash was grown on a certified organic farm, however, it was processed in a facility that is not certified organic, so the end product cannot legally be described as organic. See the discussion below for more details.

times weekly to the hospitals); ability of both distributors to respond immediately to shortages in targeted produce with other product; infrastructure including refrigerated trucks, warehouses with necessary refrigeration, and Bay Cities in-house processing capacity; avoiding the need for hospitals to create new vendor accounts; and food safety assurances. Bay Cities' customers commented that their high level of trust in the company's food safety practices influences their desire to have local produce come through that channel. Food safety certification is a top priority for hospitals due to the immune-compromised patient population they serve and because they must adhere to strict foodservice inspections administered by the state. Bay Cities Produce has developed state of the art food safety systems in their processing facilities and warehouse, including microbe testing of each batch of cut product, a practice that is currently far beyond the industry standard.

As the following discussion demonstrates, the FFHP experienced both success and challenges as it sought to incorporate a broad range of social, health, and environmental values into existing supply chains.

A. Transparency & traceability

One of the underlying tenets of the Farm Fresh Healthcare Project and the alternative agrifood movements from which it emerged is that the qualities of a food's production, processing, and distribution have implications for the health of people, communities, and the environment. While conventional supply streams are coordinated predominantly by price and economic efficiency, the FFHP and similar farm-to-institution initiatives prioritize food with a history that embodies a broader range of values and goals. Thus, mechanisms of transparency and traceability are central to values-based supply chain models in order to communicate crucial characteristics such as local provenance, conservation techniques, or ethical standards to final consumers (Cohen and Derryck 2011, Lerman 2012a, King et al. 2010). This information is typically not readily available to buyers in conventional supply chains, which focus on price and measurable quality characteristics such as weight or pack size as the predominant factors of relevance (Feenstra et al. 2011).

Although FFHP hospitals had previously been sourcing local produce through their regional distributors, prior to the project they knew little about the source of the product beyond geographic distance and had no mechanism for prioritizing small to mid-size growers. As one hospital representative stated, "We can now order directly through our produce company for a specific farm, we never had that before, we could only know after the fact [on invoices] if it was locally sourced, and we didn't know anything about the farm or the farm practices" (Interview #74 2013).

Embedding the product with information all the way through the supply chain is central to the ability of hospitals to "pull" product through the system by prioritizing a specific farm when they're ordering, to track their purchasing progress, and to know when the product is in-house so they can "tell the story" of the product to patients, staff and visitors.

1. Existing mechanisms of transparency

There were some important systems of transparency already in place in relation to each distributors' definition of *local* based on geographic distance from their facilities. In response to customer demand for local products, Bay Cities offers a fresh-cut blend of root vegetables from farmers in the Brentwood region of California. This product is labeled as a *Brentwood Mix* on both ordering sheets and packaging. Bay Cities also includes demarcation of its three local zones, *L1*, *L2*, and *L3* on invoices. Upon request, Bay Cities will produce a local purchasing report based on these zones for each customer.

FreshPoint SF publishes a weekly *hot sheet* of locally-produced items. More recently, FreshPoint SF has become a vendor member of CAFF's *Buy Fresh Buy Local* program. Marking products with the Buy Fresh Buy Local logo demarcates them as products grown by family farmers who are members of CAFF. The hot sheet lists item codes, cost, product name, farm name (or in some cases an indication that the product will come from one of two farms), where the item is produced and the distance to the FreshPoint SF facility. Customers can't request product from particular farmers, but if a customer orders a product that they see on the hot sheet, such as cherry tomatoes, they can trust that when the product arrives at the hospital, it was produced by the farmer who was listed on the hot sheet. FreshPoint SF's invoices include demarcation of *L* for items produced within 150 miles for their facility, *CA* for items produced within California, and *O* for organic products. FreshPoint SF staff will run a report on sales using specific product codes and will run general local purchasing reports for customers upon request.

2. The need for new technology systems

Achieving the level of traceability aimed for by FFHP hospitals and nonprofit partners in terms of identifying farm names throughout the supply chain - at point of sale, on invoices, and on packaging for fresh-cut produce - will require significant changes in tracking systems, with the biggest stumbling block being distributor IT systems. Although distributors already trace every batch of whole and processed product to the farm as a result of food safety concerns, they do not have systems in place to incorporate that information into hospitals' ordering sheets or onto packaging for processed products.

Currently, Bay Cities Produce and FreshPoint SF assign a product code according to product type, for example, all 3/4-inch cut green beans have the same code. Creating an individualized product code for farm-identified products, like Dwelley Farm green beans, was bound up with a host of system changes. One distributor representative remarked that, "The in-house frustrations, the difficulties with order entry, they are just monumental" (Interview #72 2013). The challenges were in large part due to the fact that the current IT systems were built around an assumption that farm name doesn't matter. Without access to updated IT systems for the duration of the FFHP, all of the necessary changes had to be done manually. For example, Bay Cities created overrides in their computer system so that when the FFHP hospitals ordered green beans it would automatically show that they wanted Dwelley Farm green beans.

The type of software that can handle farmer identification exists. It has been developed by distributors and other intermediaries that see the value in tracking and communicating qualities of provenance and production, in other words, intermediaries committed to alternative agrifood values and goals. One example is Veritable Vegetable, an organic produce distributor located in

San Francisco. The company has developed a proprietary software system that lists farm names on order sheets, allowing customers to weigh factors like farm origin in addition to price. However, Veritable Vegetable primarily serves natural food stores and cooperatives, not institutions, and only offers whole product, not processed.

Both distributors state that they have future plans to invest in improved software that could track farm names or other relevant characteristics throughout the system. In the meantime, FFHP participants have brainstormed ways to ensure transparency while incurring fewer transaction costs. One distributor suggested that rather than create individualized product codes, he might share his production log with hospitals and nonprofit partners weekly or allow them to spontaneously request to see purchase slips for a given day. Yet this after-the-fact reporting doesn't allow the hospitals to leverage their purchasing power to choose one product over another based on provenance, farm scale, and production practices. Having that choice is central to institutions' ability to influence change within the food system.

SF PSR and CAFF initiated conversations around creating a *Buy Fresh Buy Local* product line which would operate like Bay Cities' Brentwood Mix. This would be a shift from tracking a specific farm's product through the processing room to using an identified line of product sourced from farmers who meet the criteria of the project, in this case, CAFF member farmers participating in the FFHP. This would allow greater ease in relation to the distributors' ordering and processing systems and, therefore, would potentially allow a more rapid expansion in the number of farmers and products able to be incorporated in the FFHP.

3. Traceability of fresh-cut produce

During the pilot year of the project, the FFHP succeeded in supplying hospitals with fresh-cut green beans labeled by farm name at point of sale and on the product package. This represents a significant improvement in transparency and was achieved with a great deal of effort. Typically, once product enters the processing facility it becomes anonymized. In order to fulfill a set of orders for cut green beans, a processor may combine product from a number of farmers. Tracking a specific farmers' product all the way through processing resulted in different challenges for each distributor based on the structure of their operations. Bay Cities was more nimble as a result of having an in-house processing room, but having to organize processing and labeling around set batches of Dwelley Farm green beans resulted in high transaction costs:

You've got to stop all the presses and make different labels, get them on the bag, see who gets what - is UCSF going to get the DF label today? Is John Muir? If I have to create labels for all of these farms, you can imagine. If it's just beans it's not that bad, but for me, beans represents an easy dozen items that I need to process - my different blends, cleaned and trimmed, half-inch, two-inch, three-inch - all of those labels have to be changed if we run out of that lot and have to go to another lot. (Interview #72 2013)

FreshPoint SF is purely a distribution company, not a processor-distributor. To supply customers with cut produce, they source from other facilities across the country. The majority of their green beans, for example, come from a processing facility in Ohio. They weren't able to

make the logistics of dealing with a local processor work successfully in order to supply their FFHP hospital with fresh-cut Dwelley Farm green beans. However, as discussed below, they renewed their efforts in the winter with butternut squash and were able to make the mechanics of the arrangement work, albeit in small volume.

4. Telling the story to hospital patrons

Participating hospitals kept the story of the FFHP produce intact all the way through to the end consumer, their patrons. The hospitals were interested in conveying their involvement in the FFHP to patients and cafeteria visitors as a way to advertise and promote the extra effort they are making to undertake values-based purchasing and to educate hospital patrons about local and seasonal foods. One hospital representative remarked, "We don't want to just say we purchase local, we want to tell stories about great farmers. By telling those stories within a great institution, we can lead; because we are who we are, people look up to us and study what we're doing" (Interview #71 2013). In order to ensure that the story of the FFHP didn't stop at the plate, CAFF produced posters, farmer profiles, and tray cards for the participating hospitals. The materials used the Buy Fresh Buy Local branding and included information about FFHP farmers and the motivations behind the project.

B. Supporting small and mid-size family farmers

The FFHP specifically aimed to support small and mid-size family farmers with their stated ultimate goal being support for smaller-scale farmers practicing conservation-based production methods. The process of identifying farmers for the FFHP provides insight into the tensions between conventional and alternative values and goals that were negotiated within the project.

Aligned with recent literature on the *agriculture of the middle*, which predicts that mid-sized farms have a comparative advantage over small farms in terms of supplying product to institutional buyers (Kirschenmann et al. 2008), the FFHP found that mid-sized farmers were the most likely to meet the volume, pack and grade standards, and food safety criteria required by distributors and hospitals while embodying the social and environmental values driving the project. This supports the theory put forward by the Agriculture of the Middle Project that institutional buyers can serve as an important market for mid-sized farms (Lyson et al. 2008). Mid-size farmers are typically too large to survive on direct marketing like farmers' markets but struggle to succeed in highly consolidated commodity markets, making them the most threatened segment of the farm sector (Kirschenmann et al. 2008).

CAFF initially identified two mid-sized family farms for the project that were food safety certified and that carried a range and volume of products that made it worthwhile for the distributors to send a truck to the farms for pick up. As one distributor representative remarked, "It costs me \$80 to \$100 to stop my truck, so there's got to be some scalability" (Interview #75 2013). Likewise, another distributor representative noted the importance of scale in terms of fuel efficiency, "The freight thing we were able to work out to where we were able to pick up enough items in that general area so that I didn't waste a truck all the way out to grab a pallet. That's huge for my Green Certificate; if I run a truck out for 60 boxes and it holds 1,200, I'm really high on my carbon footprint" (Interview #72 2013).

The need for distribution efficiencies acted as a barrier to smaller-scale farmers. Yet, the FFHP succeeded in sourcing cherry tomatoes from one very small-scale farm, 10-acre Green Solar Farm. This was achieved as a result of Coke Farms acting as aggregator for 19 smaller farms, including Green Solar, allowing the distributors to source from those operations without making additional trucking runs.

Food safety is a central criteria for hospitals, and Bay Cities Produce and FreshPoint SF both require the majority of their farms and products to be third-party food safety certified. This, too, can act as a barrier to smaller farms. While the cost of becoming third-party food safety certified does not constitute a huge business expense (~ \$3,000), the ensuing documentation processes are time and labor intensive, representing many tens of thousands of dollars in farm employee time. Most small farms struggle to afford this additional cost. Mid-size farms must find a way to absorb the cost in order to fully market their harvest since food safety certification is increasingly essential to entry for wholesale markets. One participating mid-size farmer explained that over the past four years his farm has taken on multiple food safety certifications to reach different markets: "There's the small farm GAP program, and then there's Primus, and there's SQF2000 Global, so you can send your product anywhere in the world, and that's where we are now" (Interview #78 2013). Multiple FFHP supply chain members have a commitment to help small and mid-size farmers get food safety certified. Both Bay Cities Produce and FreshPoint SF offer scholarship programs to interested farms and CAFF has a food safety expert on staff who works with small farms to implement food safety plans.

Product specifications also acted as a barrier. The FFHP attempted to supply cut butternut squash from Coke Farms through Bay Cities Produce, but Bay Cities found the squash was too small for efficient and cost-effective processing and declined to use it. Coke Farms, however, reported that they were planting the biggest organic butternut squash variety that they could find. One hospital representative remarked that Bay Cities' specifications for product size impacts their method of identifying farmers to source from: "Now the approach is not so much to pick a farm we want to work with as much as ask Bay Cities who they're working with who fits our objectives" (Interview #71 2013). Although the FFHP may be able to identify other farmers who meet both the hospitals' and the distributors' needs, this points to the ways in which the logistical needs of institutional foodservice operations may limit the type of farmer who is able to benefit from farm-to-institution procurement initiatives.

During the evaluation process it became evident that the incorporation of farm scale in FFHP definitions of local food produced interesting tensions in relation to farmer-distributor relationships. One distributor representative stated, "My alliance is to the people who helped get us started, even though they could be huge now. My first goal is to support those who supported us - loyalty" (Interview #72 2013). While the FFHP criteria related to farm scale aligns with alternative agrifood goals, the distributor's hesitation to displace business to new farmers demonstrates one way the FFHP definition could conflict with another value prevalent in the VBSC literature, durable relationships marked by mutual benefit.

C. Decision-making equity

While the VBSC literature envisions decision-making equity between all supply chain members, the hospitals in the FFHP retained the highest degree of decision-making power, while farmers were engaged more as suppliers than as equal members and distributors were tasked with meeting hospitals' new demands. The strength of the hospitals was greatly increased by their collaboration through the Hospital Leadership Team in which they combined their purchasing power for a set of mutually-agreed upon products.

The pre-existing strategic alliances between FFHP hospitals and nonprofit organizations were a major driver in the project's success and in the power of the hospitals within the supply chain. Along with pooling purchasing power, ongoing collaboration through the Hospital Leadership Team coordinated by SF PSR includes conference calls and roundtable discussions between the hospitals on challenges, implementation strategies, and alternative food purchasing goals. In the case of the FFHP, this collaboration also provided gentle peer pressure among the hospitals that helped to encourage all facilities to commit to price increases, particularly in relation to organic strawberries, as discussed below.

Together, the FFHP hospitals represented the majority of one of the distributor's health care customers and 15 percent of his total green bean sales. Noting the importance of this type of combined demand, one hospital representative stated, "If everyone is independent, no one is going to be able to drive this huge system forward, but if we have three or four hospitals, that's a game changer. All off a sudden, our distributor is listening to everything we have to say" (Interview #71 2013). As a result, hospitals held the greatest decision-making power in the FFHP, pulling products through the system.

D. Communication and relationship-building between supply chain members

The FFHP resulted in increased communication and contact along the supply chain, leading to greater understanding of the needs of other supply chain members. Communication took the form of conference calls and in-person meetings facilitated by SF PSR and CAFF and farm visits coordinated by one hospital representative and one distributor. CAFF also played a crucial role in facilitating communication along the supply chain through an extensive amount of one-on-one calls with distributors and hospitals, conveying information back and forth.

A representative of Coke Farms noted the importance of increased communication with hospitals in relation to crop planning. Based on hospital commitment to purchasing her organic strawberries, she was able to manage her production schedule for the coming year to meet that demand. She also learned about the constraints facing hospital foodservice staff, remarking that, "It opened up my eyes to how much time it takes them to plan and to get something on the menu and how many factors they have to think about, like compatibility with all the different nutritional requirements for patients" (Interview #73 2013).

Relationships between supply chain members were further facilitated by a series of farm visits. Initially, one hospital representative was inspired by the project to take personal trips to participating farms, sharing photos and stories with other hospital members. In the second year of the project, Bay Cities organized a trip to Dwelley Farm for all of their hospital customers, including several that were not already FFHP members, three school districts, and two high-tech

company cafeterias. Bay Cities' willingness to take on this extra project signals recognition of their customers' increasing interest in building connections with specific farmers. On the farm tour, hospital representatives learned about issues of farmland preservation, farm worker concerns, food safety practices, and the impacts of weather on production. Afterwards, they reported having a stronger sense of why their long-term commitment to individual farmers matters. Through a VBSC lens, this is a significant success as personal relationships come to take precedence over, or at least stand alongside, price in purchasing decisions.

The distributors reported the value of the nonprofit organizations' involvement in the FFHP and the local food movement in general. "What's really helpful to me [about the project] is the connecting, the networking, the flow of information; CAFF has tipped me off to farmers, that's valuable information," stated one distributor representative (Interview #76 2013). Another commented on the benefits of what he perceives as local food advocates' increasing understanding of issues of scale and standardization:

CAFF has realized that food safety is a real deal. They understand that they can't put me in a position of being vulnerable, because I'm only as strong as my weakest link. They understand that they can't send me a farm that, number one isn't large enough to sustain volume and that doesn't have some sort of good agricultural practice - this is a huge transformation. (Interview #72 2013)

These examples point to the value of communication for building trust between supply chain members, as well as the relevance of taking the time to understand the needs and constraints facing other members. For farm-to-institution initiatives in general and for hybrid values-based supply chains specifically, this type of mutual learning is central to effectively combining local food ideals with conventional supply chains values and practices.

E. Prioritizing organic

During the planning phase of the FFHP, participating hospitals indicated a high level of interest in organic produce given the growing body of data linking pesticides used in conventional agricultural production to a host of adverse health and environmental impacts (Sutton et al. 2011, Alavanja et al. 2004). One hospital representative explained the connection he sees between organic produce and the role of health care organizations by referring to the *Dirty Dozen* list of produce most heavily contaminated with pesticide residues generated by the Environmental Working Group (www.ewg.org). "I would like to get our foodservice department to line up behind a commitment to not buy the twelve most heavily sprayed produce items. Strawberries are on that list. Right now, organic strawberries are so expensive, but we are making that kind of statement as a medical center" (Interview #71 2013).

The FFHP hospitals paid up to twice as much for Coke Farms' organic strawberries as they would have for conventionally-grown berries. The hospitals' willingness to pay additional costs for products that met their health and environmental values aligns with other findings on farm-to-institution initiatives which show that programs are growing in number and popularity despite higher costs (Feenstra et al. 2011). The 8,748 pounds sourced from Coke Farms represented the four pilot hospitals' total demand for strawberries over the course of the summer growing season.

The hospitals' commitment to Coke Farms resulted in a greater proportion of local sales for the farm and an increase in their strawberry acreage. Rather than sell to established customers in locations like Denver and Chicago, the farmer shifted sales to the local hospitals. In addition, Coke Farms increased their acreage of strawberries by 30 percent for the next summer growing season in order to meet the demand of FFHP hospitals, stating that, "in California the markets can be saturated with so many farms, so diversifying the customer base is really great. Both distributors [involved in the FFHP] are now buying a little more of my product across the board, and they were really supportive of the strawberry growing season" (Interview #73 2013).

The FFHP hospitals passed price premiums on to customers or absorbed them in their budgets. One facility, for example, found ways to save on their foodservice linen budget in order to cover the increased cost for the FFHP strawberries. This points to one challenge to the expansion of the FFHP, since budgets can only be reworked to find hidden savings so many times. In addition, covering the additional cost of the FFHP strawberries was possible only because they represented a relatively small proportion of hospitals' overall budgets, raising questions about the hospitals' ability to expand this type of purchasing.

F. Project stability and replicability

In addition to these budgetary concerns, two aspects of the Farm Fresh Healthcare Project raise questions about its long-term viability and replicability. First, if in-hospital champions leave before new procedures are institutionalized, conventional market forces are likely to reassert their dominance. Second, the external expertise and investment of nonprofit partners was necessary to keep the project moving. As Cohen and Derryck (2011) found, the involvement of nonprofit organizations in values-based supply chains can be "key to creating a food production and distribution system that engages a wide range of stakeholders, fosters shared governance and transparency, empowers consumers, and benefits regional farmers." In locations where nonprofit organizations are not present or not able to raise funds for farm-to-institution projects, the FFHP model may not be applicable.

The process of securing cut butternut squash illustrates the central role that nonprofit partners played in the success of the FFHP. In this case, a number of logistical challenges arose that created inefficiencies that the distributors would not willingly take on without a good deal of external pressure. Although hospital foodservice members of the FFHP had the desire to make the purchasing arrangements happen, they didn't have the time to continue following up and pressuring distributors. Ultimately, the FFHP succeeded in providing cubed, organically-grown butternut squash from Coke Farms to the San Francisco VA Medical Center (SF VA) through FreshPoint SF. Although the total volume sourced was quite small (120 pounds in total), the success lay in creating supply mechanisms that could potentially be replicated with other products.

Since FreshPoint SF does not have in-house processing, they worked with Legacy, a local processor, to cut butternut squash for the SF VA. Although the squash was organically-grown, Legacy is not an organic-certified processor, so the final product could not legally be labeled organic. To maintain the organic integrity of the product, Legacy agreed to only process Coke Farms' squash first thing in the morning before other product had gone through the clean

equipment. Another challenge involved liability and ownership of the product. Due to issues of liability, FreshPoint SF had to transfer ownership of the product to Legacy and then buy it back before selling it to the hospital. It took many weeks to wrangle this arrangement, by which time winter squash season was winding down. Coke Farms' representative perceived that her product would likely have not reached the SF VA without CAFF's involvement, commenting that "I'm afraid that [they] really have been the grease to keep it going, to keep people on task and to keep them motivated and see the bigger picture. I am a little bit worried about that" (Interview #73 2013).

The FFHP represents a departure from business as usual and has, therefore, required the development of new relationships, systems, and mechanisms of coordination. It remains to be seen whether FFHP purchasing patterns will continue once CAFF and SF PSR are no longer funded for this particular project. The organizations' goal is to help build supply chain relationships and mechanisms that will guarantee ongoing success even without their external support. One hospital representative sees this as a possibility, stating, "I see this as a strategy where eventually we get so good at lining ourselves up that we come across a great farmer and our distributor knows what to do. We'll open up a communication channel for the next season and we'll move together in sync" (Interview #71 2013).

V. Conclusion

As the local food movement seeks to expand to reach institutional buyers like hospitals and schools, researchers and practitioners will increasingly need to understand how best to engage supply chain intermediaries that are able to meet the needs of institutional foodservice operations while (re)building local and regional food system infrastructure. While continuing to pursue the development of new supply chain infrastructure such as food hubs and cooperatives, increasing attention should be turned to creating and analyzing hybrid values-based supply chains that use both conventional and alternative resources, infrastructure, and markets to achieve a broad set of value chain goals.

As an example of a hybrid values-based supply chain, the Farm Fresh Healthcare Project experienced both success and challenges in its aim to incorporate a range of local food movement ideals into existing supply chains. The project succeeded in sourcing produce from mid-scale family farmers as well as one small-scale farmer; increasing transparency and traceability to convey farmer identities throughout the supply chain; putting values-based criteria such as *organically-produced* ahead of price in purchasing decisions; and increasing communication and trust between supply chain members.

The greatest challenges to transparency that the project encountered were the lack of distributor IT systems capable of communicating farm names on order sheets and invoices as well as the logistical hurdles of segregating farm-specific products to send through the processing room, whether it was in-house (Bay Cities) or outsourced to a local processor (FreshPoint SF.) Both distributors involved in the project express plans to purchase and implement updated IT systems in the future, demonstrating that initiatives like the FFHP have an opportunity to impel conventional intermediaries to learn from and adopt the technologies and mechanisms of supply that have been developed within alternative agrifood supply chains.

The greatest challenges to meeting the hospitals' desire to source from small-scale farmers were distributors' need for distribution efficiencies, processor production specifications, and hospital and distributor food safety requirements.

Like the hybrid value chains examined by Conner et al. (2011) and Cohen and Derryck (2011), advocacy organizations played a key role in ensuring the incorporation of alternative agrifood goals in the FFHP. This poses a potential challenge to the replicability and long-term durability of the FFHP since nonprofit participation depends on external funding.

Other challenges to long-term durability are the extent to which the Project relied on a small set of foodservice champions within participating hospitals. In order to achieve project goals, the hospital members of the FFHP were willing to deal with certain inefficiencies and to work through processes of trial and error. Aligned with Feenstra *et al.*'s analysis of the factors that affect the sustainability of farm-to-institution initiatives (2011), FFHP hospitals were willing to try new procedures even if they were messier and were willing to adjust for price increases. If these purchasing priorities and procedures are not institutionalized, conventional market forces are likely to reassert their dominance once FFHP advocates are no longer managing foodservice decisions in participating hospitals. Finally, hospital budget constraints make FFHP purchasing patterns tenuous without encouragement and continuous commitment from within the hospitals, from peer hospitals, and from nonprofit partners.

Although it is beyond the scope of this paper, it is important to note that there may be broader food system benefits to engaging existing regional intermediaries in the local food movement. Due to trends of consolidation in the food system, the intermediaries that could give local and regional farmers wider access to retail, institutional, and commercial foodservice markets are being squeezed out, leaving an increasingly bifurcated system that favors small-scale direct markets and large-scale commodity markets (Perrett 2007, Martinez 2007, Gereffi, Lee and Christian 2009, Kaufman 2000). Although farmers often take center stage as the beneficiaries of the local food movement, supporting independent regional intermediaries may be just as important to achieving goals related to community building and supporting local economies.

Chapter 7

Conclusion

As the healthy food in health care movement gains momentum, a growing number of hospitals nationwide are prioritizing the procurement of sustainably-produced food and aligning their definitions of healthy food with alternative agrifood movement principles. This represents powerful new alliances between alternative agrifood movements and health care institutions with significant purchasing power and moral authority related to issues like food-related disease and environmental health. However, the logistical, budgetary, and structural constraints of institutional foodservice push back on the social, health, and environmental ideals underlying the HFHC movement. In examining these tensions, my work provides insight on the fundamental question of whether the alternative agrifood movement can effectively scale up without losing sight of the values and goals that brought it into being. The empirical data and analysis in this dissertation reveal that, as it moves from ideals to institutionalization, the HFHC movement results in a mix of transformation and concession. While the movement is pointing the way toward a food system built on health, social, and environmental ideals, it is difficult for hospital foodservice operations to reach escape velocity from the constraints of industrial and commercial norms and values.

Competing Conventions

The tensions that arise around hospitals' new food procurement goals can be understood as conflicts between competing *conventions*, or the "constellations of ideas, practices, and institutions comprising and guiding relations of production, exchange, and consumption" (Raynolds 2004, p. 728). Conventions theory provides a set of ideal types that can be used to identify and explain the ways actors justify and come to agreement on particular socio-economic and political modalities (Boltanski and Thevenot 2006). Hospital food commodity networks are governed largely by *industrial* conventions resting on standardization, efficiency, productivity, and reliability linked to formal standards, and *market* conventions of price competition. Meanwhile, the HFHC movement seeks to create new commodity network relations rooted in *domestic* conventions drawing on attachments to place and tradition, face-to-face relations, and trust of people, places or brands, and *civic* conventions based on evaluations of broad societal or ecological benefits and a commitment to collective welfare.

While staunch alternative agrifood movement advocates envision food systems that thoroughly embody domestic and civic conventions, the types of efficiency and cost trade-offs that come with enacting that vision are rarely possible for institutions serving hundreds to thousands of meals a day. As Feenstra *et al.* (2011) remind us, institutions attempting to enact new food goals still operate "within the constraints and values of the conventional market, where price, efficiency, convenience and food safety cannot be ignored and may be more important than social, community, and environmental values."

The new food procurement initiatives of the HFHC movement represent an interesting amalgam of negotiation and compromise between competing conventions. Some hospitals are rethinking their relationship to the standardization and efficiency of industrial supply chains and are dedicating the time and money it takes to revolutionize their foodservice operations, for example, by dramatically increasing the amount of scratch cooking they do in order to use more whole foods and accommodate the heterogeneity of product size that often accompanies sourcing from smaller-scale producers (Herzog 2012, Sirois et al. 2013). Others are leveraging their purchasing power in order to secure new products that embody domestic and civic values through their conventional supply streams, like the group of Maryland hospitals that secured a contract through their Group Purchasing Organization for humanely-raised chicken free of antibiotics and arsenic from a regional producer (HCWH 2011), or the coalition of California hospitals that gained a commitment from US Foods, a major food distributor, to carry cage-free eggs (HCWH 2012).

While some may argue that the extent to which industrial and commercial conventions continue to govern HFHC hospital food commodity networks results in an unjustifiable watering down of movement values, from another vantage point, the demotion of price and efficiency to just two in a broad set of criteria guiding food purchasing for HFHC hospitals demonstrates real change. And yet, the ideological heart of the HFHC movement is far more radical than the supply chain changes that its leading hospitals are enacting, demonstrating the underlying clash of conventions that the movement must negotiate.

Flesh and Metaphor

The ecological nutrition discourse around which the movement has coalesced is built on an understanding that agrifood practices and policies become embodied in us. Data about the health externalities of the food system reveal that we are co-constituted with our environments and that we are not the only agents of change in the landscape (Latour 1993, Callon 1986, Law 1992). We shape the eco-agri-food system through economics, public policies, modernist aesthetics, and an array of technologies, from tractors and fertilizers to refrigerated trucks and mechanized slaughterhouses; meanwhile, agents in the system from pathogens to pesticides shape our bodies in turn, contributing to disease or well-being. Through this analysis, HFHC actors contend that the logic, structures, and practices of the industrial food system are fundamentally at odds with the health of human bodies, communities, and the environment.

Here, human bodies are both flesh and metaphor. Public outrage about agrifood technologies like rBGH or GMOs can be read as both skepticism about ingesting a substance with unknown or potential health effects and anger at taking into one's body the products of an industrialized food system dominated by corporate pursuit of profit. As Fischler (1988) asserts, we *incorporate* food both physically and psychologically. Likewise, calls for alternative food system models within the HFHC movement reflect not only scientific/material assessments of the externalities produced by global, industrial production, processing, and distribution practices, but an ideological stance that our food system should be designed to protect the health of individuals, communities, and the environment, not just the bottom line of agribusiness.

Social science literature remains largely entrenched in the dualistic separation of nature and culture of Modernist ontology.²⁵ Although there has been an increased focus on bodies and embodiment over the past decades, much of this work treats the body as a blank slate ready to be inscribed with the representations, symbols and meaning of various discourses, rather than as a location of action, experience, and knowledge that has force in the world (e.g. Foucault 1972, Valentine 1999, Longhurst 1997, Butler 1990). While discursive approaches to embodiment have been profoundly important in deconstructing the ways bodies and biologies have been enlisted to assert oppressive classist, racist, sexist, and heteronormative agendas, there is a need for more analysis that engages with the ethics, politics, and actions that emerge from our lived experience as fleshy organisms in a material world.

From an ecological nutrition perspective, human bodies become locations of resistance to the degradations of the modern industrial food system and sites that inspire the transformation of food commodity networks, public health and agrifood policies, and notions of what constitutes healthy food. While critiques of capitalism and industrialization have historically focused on labor, social problems, and, more recently, environmental degradation, the scientific data being called upon in the HFHC movement trace the material flows between the environment and human bodies, revealing a far more intimate, corporeal basis for critique. We come to see, as Beck argues, that “we participate with our bodies in a metabolic process and can be eroded like the stones and trees” (1992 p. 74). Our attempts to bend the landscape and the living bodies of plants and animals to the purposes of profit without attention to externalized costs come back like a boomerang on our own animal bodies. In recent decades, chemical contamination, climate change, and a host of other risks attendant to industrialization reveal the flows of substances and forces between people, places, and economic and political systems (Alaimo 2010, Beck 1992), demonstrating, as Latour (1993) argues, that we have never actually been Modern. We have begun to reconceptualize ourselves as ecological bodies, understanding that our health and well-being are unquestionably bound up with the environments of which we are a part (Nash 2006). What is at stake, says Beck, is “whether we can continue the exploitation of nature (including our own) (1992 p. 40).

Health care institutions leading the HFHC movement are articulating this ecological understanding of health. “The planet is our responsibility; a healthier planet means healthier patients,” asserts a video produced by University of California at San Francisco Medical Center (UCSF online). Dignity Health, the second largest health system on the West Coast, states:

As health care providers, we recognize the interdependence between human health and our environment and believe in the caring stewardship of a renewable Earth for the enhancement of all life. If it's good for the planet, it's good for the patient. (Dignity Health online)

Rather than continuing to treat the downstream symptoms of a broken food system, HFHC advocates are calling for a prioritization of prevention-based care. As health care spending climbs to over 15 percent of GDP (Fuchs 2013), they are pointing to the externalized

²⁵ For elaboration on this critique, see (Hall 2000, Dorn and Laws 1994, Moss and Dyck 1999) (Alaimo and Hekman 2008) (Goodman 1999, FitzSimmons and Goodman 1998, Guthman and DuPuis 2006).

environmental and health costs of “cheap” food as one of the most significant sources of health care costs related to *inter alia* cancers, obesity, diabetes, foodborne illness and antibiotic-resistant bacteria (HCWH online-c). From both an economic and ethical perspective, allocating resources to maintain sustainable public health for all people and ecosystems should take precedence (Pierce and Jameton 2003). Given that environmental health concerns are inevitably bound up in debates around “sound science” and what types and amounts of evidence are sufficient to impel action, the HFHC movement can be seen as enrolling a set of powerful actors behind a precautionary approach to public health.

Within the HFHC movement, concerns about illness are being used to galvanize new coalitions of actors to question the structures, norms, and trajectory of the modern, industrial food system. As hospitals nationwide seek to create new and to leverage old supply chain relationships to enact HFHC goals, they should take seriously the fact that many supply side barriers are not simply obstacles to overcome, rather, they are indications of powerful economic and political forces aligned, either actively or passively, in support of the status quo. Better shopping will not solve these problems, regardless of the economic power commanded by those who hold the purse strings. While HFHC procurement initiatives point the way toward new food system models, the movement’s real strength may be in leveraging another form of currency – the moral and cognitive authority of doctors, dietitians, and other health experts who increasingly recognize their stake in agrifood policy debates. Without public policy setting the conditions for a food system that guarantees environmental stewardship, maintenance of rural communities and local economies, and protection of public health, hospitals hoping to achieve HFHC goals will continue to swim upstream against powerful currents.

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Appendix A

Interview confidentiality agreement and interview guides

UNIVERSITY OF CALIFORNIA AT BERKELEY



BERKELEY • DAVIS • IRVINE • LOS ANGELES • MERCED • RIVERSIDE • SAN DIEGO

SAN FRANCISCO • SANTA BARBARA • SANTA CRUZ

Kendra Klein
PhD Candidate
Department of Environmental Science, Policy & Management
UC Berkeley

Thank you for agreeing to take part in my research. I appreciate your willingness to share your time, knowledge and experience. I have mapped out my interests and a set of interview questions below, understanding that we may not have time to get to all of them.

Confidentiality

Any information you give me will be confidential unless you choose otherwise. If results of this study are published or presented, individual names and other personally identifiable information will not be used unless you give explicit permission to do so.

The information you give me will be aggregated anonymously with data from interviews I am conducting nationwide with healthcare institution purchasing directors, foodservice directors, and staff at GPOs and food distributors.

Notes & Digital Recording

With your permission, I will take notes and/or digitally record during the interview. The recording is to help me accurately detail the information you provide and will be used for my research only. The recording will be erased once I have transcribed the interview, which I typically do within a week of conducting the interview. If you choose not to be recorded, I will take notes instead.

Research Interests

My research aims to understand the dynamics of large-scale food supply chains and the possibilities for institutional buyers like hospitals to increase procurement of local, regional, and sustainably-produced food. I am interviewing hospitals and supply chain intermediaries across the country about their food procurement systems to better understand how the supply chains are set up and the benefits and challenges associated with supply chain relationships in general and related to procurement of more sustainable food. I'm particularly interested in the role of broadline distributors and group purchasing organizations.

Interview Questions

Hospitals

- What policies and/or initiatives is your hospital undertaking in relation to hospital food? Why?
- What benefits do you hope will result? What would a successful program accomplish? Look like?
- How does the program choose which criteria or initiatives to prioritize?
- Who within the hospital is involved?
- Which actors are necessary to make the initiatives happen?
- Are there metrics in place to measure success?
- Why are these programs emerging at this time?
- What is inspiring your involvement?
- How do you define “food system?”
 - In what ways do you think the food system and human health intersect?
 - What impacts does the food system have on human health?
- Do you perceive any health benefits related to organic, local, fair trade, rBGH-free dairy, meat produced without antibiotics? Others?
- Do you know of or use any specific scientific data that support these ideas?
- Are you using the term *ecology* in relation to food and health?
 - How do you define ecology?
- Are you using specific scientific data to support the initiatives?
- Is *sustainability* a goal?
 - How do you define sustainability?
 - How does your institution choose which markers of sustainability to use?
- Have you encountered resistance within the hospital?
- What are some of the obstacles/challenges to implementing new food initiatives?
 - Procurement systems, GPOs, distributors, etc.?
- How do you balance goals with costs/drawbacks?
- What are some of the greatest opportunities you can or are taking advantage of?
- What are the greatest sources of assistance and support?
- Are you partnering with any other institutions, groups or organizations?
- Are you doing any patient or community education in relation to the programs? In what form?
- Have you received any feedback from patients?
- Feedback from staff?
- Feedback from community?
- What would you like other hospitals that are interested in these types of initiatives to know?
- What is your future vision and goals related to hospital food?
- Are there changes in the food system you would like to see beyond the hospital setting?
- Do you have any thoughts on local, state or federal food or agricultural policy? Either problems or possibilities for change?
- Is there any other information you would like to share?
- Who else do you recommend I talk to?

Nonprofit Organizations

- What role does your organization play in relation to alternative food or environmental health movements?
- What policies and/or initiatives is your organization undertaking in relation to hospital food? Why?
 - What benefits do you hope will result?
 - What would a successful program accomplish?
 - Are there metrics in place to measure success?
- Why are these programs emerging at this time?
- What motivates your organization's involvement?
- How do you define "food system?"
 - In what ways do you think the food system and human health intersect?
 - What impacts does the food system have on human health?
- Do you perceive any health benefits related to organic, local, fair trade, rBGH-free dairy, meat produced without antibiotics? Others?
- Do you know of or use any specific scientific data that support these ideas?
- Is *sustainability* a goal of the initiatives your organization is involved in?
 - How does the program choose which markers of sustainability to use?
- Are you using the term *ecology* in relation to food and health?
 - How do you define ecology?
- Have you encountered resistance within healthcare institutions?
- What are some of the obstacles or challenges to implementing new food initiatives?
 - Procurement systems, GPOs, distributors, etc.?
- How do you balance goals with costs or drawbacks?
- What are some of the greatest opportunities these initiatives are able to take advantage of?
- What are the greatest sources of assistance and support?
- Are you partnering with any other groups or organizations?
- Are you doing any patient or community education in relation to the programs? In what form?
- What would you like other organizations and healthcare institutions that are interested in these types of initiatives to know?
- What is your future vision and goals related to healthcare institution food procurement?
- Are there changes in the food system you would like to see beyond the healthcare setting?
- Are there ways local, state or federal public health or agricultural policy could support this work?
 - Are there ways that it impedes this work?
- Is there any other information you would like to share?
- Who else do you recommend I talk to?

Supply Chain Intermediaries

- What role does your company play in health care food supply chains?
- What types of vendors and buyers do you work with?
- What percentage of your business is hospitals? What percentage is schools?

- What trends do you see in institutional food procurement?
- Have you seen an increase in demand for food based on environmental or health goals? Such as organic? Local? Hormone-free animal products? Cage-free eggs?
- If yes, how has your company responded to these demands?
 - For example sourcing from new producers or implementing a system to track provenance?
- Are there obstacles to fulfilling any of these demands? If so, please describe them.
 - Are there supply limitations? Economic limitations? Tracking/transparency limitations?
 - Is your company working to address any of these?
- Does your company see business opportunities in supplying *environmental* or *ecological* food?
 - For example organic or local?
- Are you working with any particular institutions that are undertaking new environmentally-based or health-based food procurement strategies?
 - If yes, please describe your working relationship.
 - Did they approach you with new food procurement goals?
 - Are you able to fulfill them?
- Does your company prioritize local or regional sourcing? Why or why not?
 - What is the geographical scope of your food sourcing infrastructure?
- Does your company have sustainability goals?
 - If yes, what markers or metrics of sustainability do you use?

Farmers

- How did you get involved with farm to hospital or healthy food in health care initiatives?
 - Why did you get involved?
- What benefits have you experienced or do you hope for?
 - Has your involvement changed the way you farm?
- Why are these programs emerging at this time?
- How would you define a “food system?”
 - What problems do you perceive with the current food system?
- In what ways do you think the food system and human health intersect? What impacts does the food system have on human health?
- Do you perceive any health benefits related to organic, local, fair trade, rBGH-free dairy, meat produced without antibiotics? Others?
 - How about environmental benefits? Agricultural benefits?
- Are you certified organic? etc.? Why or why not?
- Do you know of or use any specific scientific data that support these ideas?
- How do you define *sustainability*?
 - Do farm to institution programs increase sustainability?
- What does *ecology* mean to you?
 - Do you use the term ecology in relation to food and health?
 - Do you think it’s applicable?

- What are your greatest challenges as a farmer?
 - Do farm to institution programs address any of these?
- What alternatives should be pursued? Why?
- Are you partnering with any other groups or organizations?
- What would you like other farmers who are interested in these types of initiatives to know?
- What is your future vision and goals related to the food system?
- Do you have any thoughts on local, state or federal food or agricultural policy? Either problems or possibilities for change?
- Is there any other information you would like to share?
- Who else do you recommend I talk to?

Appendix B

Participant observation of the Health Care Without Harm Healthy Food in Health Care Program Venues and Sources 2010 – 2013

National HFHC Program Annual Planning Retreats

- October 2010, Bolinas, California
- October 2011, Seattle, Washington
- November 2013, Berkeley, California

National HFHC Program Internal Conference Calls

- Healthy Food in Health Care organizers (monthly)
- Supply Chain Transformation workgroup (monthly)
- Clinical Education and Advocacy workgroup (monthly)

National HFHC Program Listservs

- Healthyfood – public
- Healthyfoodplan – internal

National HFHC Program Conference

- FoodMed Conference, Seattle, Washington, October 18-19, 2011

Regional HFHC Conferences & Events

- Food Matters: A Clinical Education and Advocacy Program, Health Care Without Harm and SF Bay Area Physicians for Social Responsibility, San Diego, CA, November 9, 2013
- Los Angeles Healthy Food in Health Care Roundtable, Health Care Without Harm and SF Bay Area Physicians for Social Responsibility, Los Angeles, CA, November 4,
- Balanced Menus: Meeting Health Care's Demand for Sustainable Meat. UCSF Medical Center and David Brower Center. Health Care Without Harm and SF Bay Area Physicians for Social Responsibility, October 7-8, 2013
- Food Matters: A Clinical Education and Advocacy Program, Health Care Without Harm and the Ecology Center, Spectrum Health Systems, Grand Rapids, MI, November 12, 2011
- Food Matters: A Clinical Education and Advocacy Program, Health Care Without Harm, Thomas Jefferson University, Philadelphia, PA, June 11, 2011
- Local Food to the Rescue: A Conversation with Joel Salatin of Polyface Farms, Kaiser Permanente, Oakland, CA, January 21, 2011
- Food Matters: A Clinical Education and Advocacy Program, Health Care Without Harm and SF Bay Area Physicians for Social Responsibility, Oakland, CA, March 5, 2011

California HFHC Conference Calls

- San Francisco Bay Area HFHC Hospital Leadership Team, organized by SF Bay Area Physicians for Social Responsibility, quarterly, 2012 – 2013
- Los Angeles HFHC Hospital Leadership Team, organized by SF Bay Area Physicians for Social Responsibility, quarterly, 2013

2013 California Healthy Food in Health Care Survey PART 1

Introduction

Welcome to Part 1 of the California Healthy Food in Health Care Survey

Time: There are 24 questions in this survey. It should take approximately 15 minutes to complete.

Deadline: Friday, June 14th

Re-entering survey: PLEASE NOTE - YOU CANNOT RE-ENTER THE SURVEY ONCE YOU START. The online survey must be completed in one sitting, because you will be unable to return.

Filling out survey by hand: If you would like, you can print out the questions to fill out the answers by hand prior to completing the online survey, by downloading the pdf [here](#). If you prefer, you may just send us the pdf by fax (270-912-1959) or email (kleinkec@yahoo.com).

One survey per facility: Please complete only one survey per facility. Provision of system-level data will skew the survey results; this means that each facility within a health system should complete a separate survey.

Confidentiality: Results from this survey will only be used in aggregate. If we would like to publicize the results of your facility, we will first contact your facility for permission and wait for your facility's approval.

Questions: If you have questions or need assistance at any time, please feel free to contact Kendra Klein, Senior Program Associate: kleinkec@yahoo.com.

Facility Information and Contact

* 1. Facility Information

Facility Name:

Health System:

City/Town:

* 2. Primary Contact

Name:

Title:

Department:

Email Address:

Phone Number:

Background on Food Service

2013 California Healthy Food in Health Care Survey PART 1

*3. Our food service is operated by:

- Hospital/Health System (self-operated)
- Contracted Food Service Management Company

If contracted, please provide name of company.

*4. Which of the following GPO(s) and distributor(s), if any, does your facility utilize for food-related contracts?

(Check all that apply.)

- | | |
|--|---|
| <input type="checkbox"/> Novation (VHA/UHC/Provista) | <input type="checkbox"/> HealthTrust Purchasing Group |
| <input type="checkbox"/> Premier | <input type="checkbox"/> MedAssets, including Broadlane |
| <input type="checkbox"/> Amerinet | <input type="checkbox"/> Sysco |
| <input type="checkbox"/> Entegra | <input type="checkbox"/> US Foods |
| <input type="checkbox"/> Foodbuy | <input type="checkbox"/> United Natural Foods, Inc |
| <input type="checkbox"/> Food Services of America | <input type="checkbox"/> None |
| <input type="checkbox"/> Other (please specify) | |

Farmers' markets, CSAs, and hospital gardens

2013 California Healthy Food in Health Care Survey PART 1

***5. Does your facility have any of the following?**

(Check all that apply.)

- Farmers' market
- Farm stand
- Community Supported Agriculture (CSA or farm share) program
- On-site garden
- None
- Don't know
- Other (please specify)

Healthy Food Environment

6. Which of the following steps has your facility taken to increase offerings of fruits and vegetables and/or nutritionally-dense and minimally-processed/unrefined foods?

(Check all that apply.)

- Used whole grain options for a minimum 50% of grains and breads
- Increased cooking from scratch
- Provided a minimum of one vegetarian menu option during each meal
- Created seasonal cafeteria menus to allow for increased use of fresh, local produce when available
- Created seasonal patient menus to allow for increased use of fresh, local produce when available
- Reduced prices on healthier options
- Adopted minimum standards to address incorporation of nutritionally healthy and sustainably-produced foods in vending machines, such as USDA Certified Organic snacks and beverages, Certified Fair Trade coffee and tea, rBGH-free dairy products, etc.
- Promoted breast feeding
- Eliminated standard practice of free formula giveaways
- None
- Don't know
- Other (please specify)

2013 California Healthy Food in Health Care Survey PART 1

7. Which of the following steps has your facility taken to reduce unhealthy (trans and saturated) fats and sweetened foods?

(There are separate questions for beverages next.)

(Check all that apply.)

- Reduced products with high fructose corn syrup
- Eliminated trans fats (partially hydrogenated/fully hydrogenated) & created a heart-healthy oils purchasing policy
- Eliminated deep-fried foods from patient meals and cafeteria
- Developed & implemented a purchasing policy to eliminate artificial food coloring and flavoring
- Developed & implemented a policy requiring disclosure & elimination of nanotech additives
- Ended contract with fast food company
- Increased pricing on unhealthy items
- None
- Don't know
- Other (please specify)

Healthy Beverages

"Healthy Beverages" are identified by HCWH as: unsweetened, water, 100% fruit or vegetable juice, milk (Organic or rBGH), non-dairy alternatives, coffee, and tea.

*8. Has your facility initiated a Healthy Beverage program or generally worked to increase the % of healthy beverages (and/or decrease the % of sugar-sweetened beverages) served and sold throughout the hospital?

- Yes
- No
- Don't know

Healthy Beverages

2013 California Healthy Food in Health Care Survey PART 1

9. Which of the following steps has your facility taken to create a healthier beverage environment, reduce beverage container waste, and/or promote tap water consumption?

(Check all that apply.)

- Decreased offerings of sugar-sweetened beverages
- Eliminated sugar-sweetened beverages
- Increased offerings of healthy beverages (see definition above)
- Offer discounts in cafeteria/coffee kiosks to customers using reusable containers
- Provide bulk/fountain beverage stations (i.e. infused water, iced tea, coffee) in cafeteria
- Offer beverages in pitchers for meetings and conferences rather than single-use beverages
- Eliminated single-use water bottles throughout facility, including vending machines and conferences
- Use price incentives to encourage use of fountain drinks over bottled drinks
- Provide reusable water containers (for purchase or free) in cafeteria & indicate availability through signage (or shelf space)
- Provide clear signage in break rooms and vending areas indicating the nearest publicly available water fountain
- None
- Don't know
- Other (please specify)

Local & Sustainable Food & Beverage Procurement

For the purposes of this survey **"sustainable"** is defined as foods and beverages that are:

- Third-party certified, i.e., USDA Certified Organic, Food Alliance Certified, Rainforest Alliance Certified, Protected Harvest, Fair Trade Certified, Bird Friendly, Certified Humane Raised and Handled, Animal Welfare Approved, Salmon Safe, NON GMO Project, Marine Stewardship Council.

AND/OR

- Approved to carry one or more of the following USDA or FDA approved label claims: "Raised without antibiotics" or "No antibiotics administered" (poultry and meat products); "Raised without added hormones" or "No hormones added" (beef and lamb only); "No genetically engineered ingredients" (products made from corn, soy, canola or their derivatives); "rBGH-free", "rBST-free", "Grass-fed" (products from ruminants such as beef cattle, dairy cattle, lamb.)

"Local" is defined as: grown/raised and processed within 250-miles of your facility. For processed foods with multiple ingredients, including breads and other bakery items, only products with the majority of ingredients (>50% by weight) grown/raised and processed within the 250-mile radius may be considered local.

2013 California Healthy Food in Health Care Survey PART 1

***10. Does your facility purchase and serve local and/or sustainable food and/or beverages?**

- Yes
 No
 Don't know

Local & Sustainable Food & Beverage Procurement

11. Which of the following third-party certified foods and/or beverages does your facility purchase? (Please check box if you purchase at least one of the food categories listed after the certification name.)

(Check all that apply.)

- USDA Certified Organic (**full spectrum of food and beverages**)
- Food Alliance Certified (**beef, lamb, pork, poultry, milk, cheese, eggs, grains, legumes, fruit, vegetables, nuts, oils**)
- Rainforest Alliance Certified (**coffee/tea, cocoa/chocolate, tropical fruit, nuts**)
- Protected Harvest (**fruits, vegetables**)
- Fair Trade Certified (**coffee/tea, cocoa/chocolate, sugar, grains/rice, nuts, fruit**)
- Bird Friendly (**coffee**)
- Certified Humane Raised and Handled (**beef, lamb, pork, poultry, milk, cheese, eggs**) (*Please do not confuse this certification with "American Humane Certified."*)
- Animal Welfare Approved (**beef, lamb, pork, poultry, eggs, milk**) (*Please do not confuse this certification with "American Humane Certified."*)
- Salmon Safe (**fruit, vegetables, beef, lamb, milk, eggs, wine**)
- Marine Stewardship Council (**finfish, shellfish**)
- None
- Other (please specify)

2013 California Healthy Food in Health Care Survey PART 1

12. Which of the following foods and/or beverages does your facility purchase? (Please check box if you purchase at least one of the food categories listed after the label name.)

(Check all that apply.)

- Raised without antibiotics/No antibiotics administered/No antibiotics ever (**poultry and meat products**)
- Raised without added hormones/No hormones added (**beef and lamb only**)
- rBGHfree/rBSTfree/Our farmers pledge not to use rBGH (**dairy products**)
- Cage-free (**eggs**)
- American Grassfed certified (**beef, dairy**)
- USDA Grassfed (**products from ruminants such as beef cattle, dairy cattle, lamb**)
- NON GMO Project verified (**products containing corn, soy, canola**)
- No genetically engineered ingredients (**products containing corn, soy, canola or their derivatives**) *Please do not confuse this with "NON GMO Project verified."*
- None
- Other (please specify)

13. How does your facility purchase your local and sustainable foods and beverages?

(Check all that apply.)

- Directly from farms/ranches
- Via farmer cooperatives/local food hubs
- Via mainline distributor (e.g. US Foods or Sysco)
- Via local/regional produce distributor
- Via local/regional meat and seafood distributor
- Via local/regional dairy distributor
- From a local, independent company (e.g. a local bakery)
- With the help of a non-profit organization (e.g. Community Alliance with Family Farmers, Physicians for Social Responsibility, etc.)
- None
- Other (please specify)

2013 California Healthy Food in Health Care Survey PART 1

14. What strategies has your facility used to manage, minimize, offset, or accommodate any additional costs associated with increased purchases of local and sustainably-produced foods?

(Check all that apply.)

- Increased budget
- Switched to room service model
- Purchase direct from farmer
- Buy animals, such as beef cattle, whole and have processed to meet facility needs
- Commit to purchasing a specific volume
- Increase pricing on less healthy items
- Adjust pricing as needed
- Explain reasons for increased pricing to cafeteria patrons
- Focus on food waste reduction
- Reduce spend on other budget items
- Streamline inventory
- Don't know
- Other (please specify)

Balanced Menus - Less Meat, Better Meat

***15. Has your facility taken the Balanced Menus Challenge ("Less Meat, Better Meat") or adopted an internal policy with specific targets for meat reduction and sustainable meat procurement?**

(Meat = beef, pork, poultry, and lunch meat.)

- Yes, taken the Balanced Menus Challenge
- Yes, adopted internal policy
- No
- Don't know

Balanced Menus - Less Meat, Better Meat

16. Which of the following strategies has your facility implemented to reduce the amount of animal-based protein (meat, poultry, seafood, dairy, and/or eggs) in menus?

(Check all that apply.)

- At least one protein-balanced vegetarian or vegan menu option was available at each meal for patient and cafeteria food through the year.
- Cafeteria menu was meat-free one day per week throughout the year.
- Patient food menu was meat-free one day per week throughout the year.
- Portion sizes of meat (beef, pork, chicken, turkey, bison, lamb) offered in patient and cafeteria meals were reduced.
- 50% or more of daily meals served are vegetarian or vegan
- None
- Other (please specify)

17. If you have implemented a meat reduction program (such as Balanced Menus), please estimate the percentage by which you have reduced meat procurement since you began the program.

(Enter percentage without punctuation or symbols, e.g. 20 instead of 20%)

Conservation and Waste Reduction

18. Does your facility use reusable food service ware, i.e., all plates and covers, cutlery, bowls, and hot and cold cups?

(Check all that apply.)

- Exclusively use reusable food service ware in cafeteria
- Exclusively use reusable food service ware with patient meals
- Partially use reusable food service ware in cafeteria
- Partially use reusable food service ware with patient meals
- Future plans to transition to reusable food service ware
- None
- Don't know
- Other (please specify)

19. Which of the following activities has your facility taken to reduce food waste and/or increase composting?

(Check all that apply.)

- | | |
|--|--|
| <input type="checkbox"/> Implement a composting program for organic materials (food waste and compostable food service items) | <input type="checkbox"/> Prevent overproduction |
| <input type="checkbox"/> Use compostable service ware and take-out containers (i.e. made from 95 to 100% biobased materials such as corn, potatoes, sugar cane, virgin and recycled wood fiber)? | <input type="checkbox"/> Reduce trim waste, spoilage, burnt/dropped/contaminated items |
| <input type="checkbox"/> Track food waste | <input type="checkbox"/> Usable food donation program in place, e.g, donates unused hot tray items to local homeless shelter |
| <input type="checkbox"/> Reduce portion size | <input type="checkbox"/> None |
| <input type="checkbox"/> Set food waste reduction goals | <input type="checkbox"/> Don't know |
| <input type="checkbox"/> Cook to order/provide room service | |
| <input type="checkbox"/> Other (please specify) | |

20. What strategies does your facility use to reduce energy and water consumption?

(Check all that apply.)

- Conduct energy audits.
- Purchase Energy Star and/or WaterSense rated commercial foodservice equipment.
- Create an equipment purchasing policy that prioritizes "total cost of ownership" and "energy/water efficiency" instead of lowest initial purchase price.
- Add sub-metering for energy at the kitchen level (or for large appliances).
- Replace all pre-rinse spray valves with low-flow alternatives.
- Implement demand control ventilation systems.
- Train staff to turning appliances off when not in use.
- Purchase energy efficient light bulbs for cafeteria and back of house.
- None
- Don't know
- Other (please specify)

Sustainable Food Education & Promotion

2013 California Healthy Food in Health Care Survey PART 1

***21. Which of the following steps has your facility taken to educate employees about its healthy and sustainable food practices and procedures?**

(Check all that apply.)

- Upon hire, taught food service staff about the facility's food sustainability initiatives.
- Hosted at least one educational event for food service staff (in-house and/or contracted food service staff) focused on the facility's food sustainability initiatives.
- Hosted at least one educational event for non-food service staff about the facility's food sustainability initiatives.
- None
- Don't know
- Other (please specify)

***22. Which of the following steps has your facility taken to promote its healthy and sustainable food initiatives to patients, visitors, and cafeteria patrons?**

(Check all that apply.)

- Posted a signed copy of Healthy Food in Health Care Pledge.
- Promoted local, healthy, and sustainable menu items for patients, e.g., menu symbols or labels.
- Promoted local, healthy, and sustainable menu items and retail products for cafeteria patrons, e.g., signage and displays.
- Hosted an event for surrounding community to highlight facility's commitment to sustainable foods while explaining relationship between human health and food production and distribution.
- None
- Don't know
- Other (please specify)

Greatest Achievements

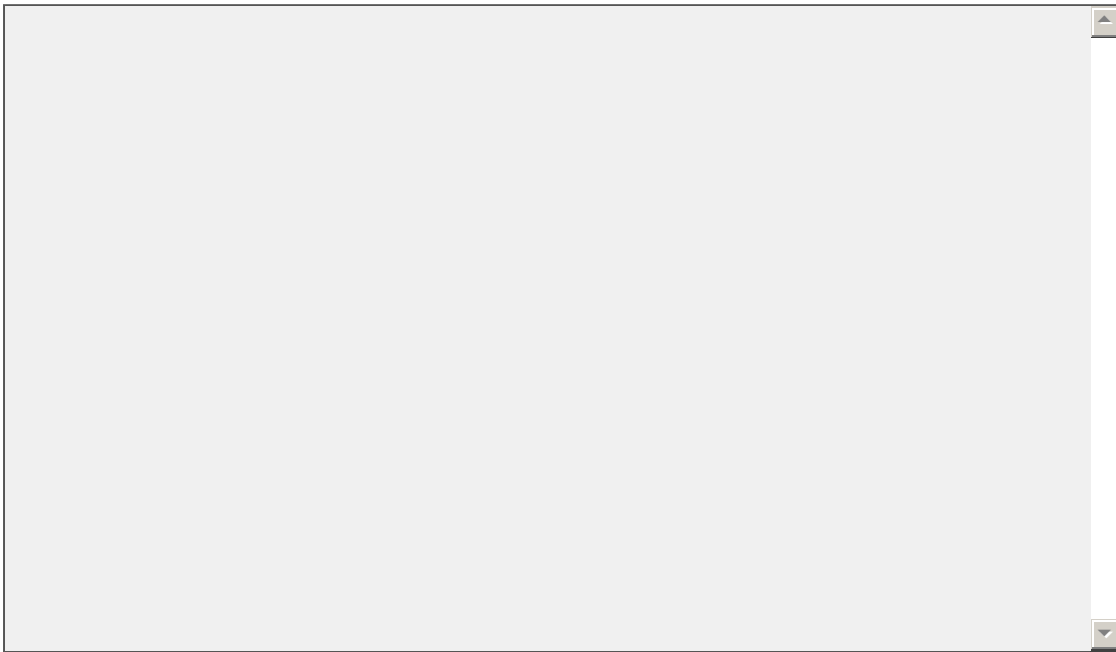
No matter how big or how small the success, please share it here. The information you provide here will only be shared if

2013 California Healthy Food in Health Care Survey PART 1

you give permission below.

23. In the space provided, please describe your facility's greatest healthy and sustainable food and beverage achievements to date, the hurdles you needed to overcome to achieve them, if any, and how you overcame them, what impacts you have seen, lessons learned, and other information that could inspire and help others to achieve similar successes.

If you have additional information or supporting documents that you would like to share, please email Kendra Klein: kleinkec@yahoo.com.



24. May we share your success story?

Yes

No

Maybe (please specify)



Thank You for Completing Part 1

You have completed the questions for Part 1. **Please do not exit this survey until you click "Done" on the next page**, otherwise, your questions will not be saved.

After clicking "Done", you may go directly to Part 2 or you may wait to fill out Part 2 any time before May 31.

To help you plan for Part 2, here is a preview of the questions that will be asked:

2013 California Healthy Food in Health Care Survey PART 1

1. Facility statistics for 2012

a. Average number of patient/resident meals served/day b. Average number of cafeteria transactions/day c. OR, Average cafeteria sales/day d. Total dollars spent on food and beverages for entire facility

2. In 2012, total dollars spent in patient meals, cafeteria, and catering for the following:

a. Local and/or sustainable food b. All beverages c. Healthy beverages

3. In 2012, total pounds of meat purchased (for both patient meals and cafeteria). Meat = beef, pork, poultry and lunch meat.

Click "Done"

Click "Done" below when you are finished with this portion of the survey.

Please do not forget about Part 2, which you can fill out anytime before June 14th. The link is in your email.

If you have questions or concerns, please contact Kendra Klein (kleinkec@yahoo.com)

2013 California Healthy Food in Health Care Survey PART 2

Introduction

Welcome to PART 2 of the California Healthy Food in Health Care Survey

Time: There are 5 budget questions in Part 2.

Deadline: Friday, June 14th

Reminders: PLEASE NOTE - YOU CANNOT RE-ENTER PART 2 ONCE YOU START. If you would like, you can print out the questions to fill out Part 2 by hand prior to completing the online survey, by downloading the pdf [here](#). If you prefer, you may just send us the pdf by fax (270-912-1959) or email (kleinkek@yahoo.com). Please complete only one survey per facility. Results will only be used in aggregate.

Questions: If you have questions or need assistance at any time, please feel free to contact Kendra Klein, Senior Program Associate: kleinkek@yahoo.com.

Facility Information and Contact

*1. Facility Information

Facility Name:

Budget

The following questions require budget/spend data and are therefore more time-intensive. We greatly appreciate your willingness to take the time needed to complete them. Thank you for helping to build a detailed and accurate account of the exciting healthy and sustainable food efforts of leading hospitals in California!

Reporting this data is part of the commitment of signing the Healthy Food in Health Care Pledge and Healthier Food Challenge of the Healthier Hospitals Initiative.

2. Please provide the following information.

(Enter numbers without punctuation, letters or symbols, e.g., 1500 instead of 1,500 and 20000 instead of \$20,000.)

a. Average number of patient/resident meals served per day in 2012

b. Average number of cafeteria transactions per day in 2012

c. OR, Average cafeteria sales per day in 2012

d. Total dollars spent on food and beverages for entire facility in 2012

Spending on Local and Sustainable Food and Beverages

For the purposes of this survey "**sustainable**" is defined as foods and beverages that are:

2013 California Healthy Food in Health Care Survey PART 2

- Third-party certified, i.e., USDA Certified Organic, Food Alliance Certified, Rainforest Alliance Certified, Protected Harvest, Fair Trade Certified, Bird Friendly, Certified Humane Raised and Handled, Animal Welfare Approved, Salmon Safe, NON GMO Project, Marine Stewardship Council.

AND/OR

- Approved to carry one or more of the following USDA or FDA approved label claims: "Raised without antibiotics" or "No antibiotics administered" (poultry and meat products); "Raised without added hormones" or "No hormones added" (beef and lamb only); "No genetically engineered ingredients" (products made from corn, soy, canola or their derivatives); "rBGH-free", "rBST-free", "Grass-fed" (products from ruminants such as beef cattle, dairy cattle, lamb.)

"Local" is defined as: grown/raised and processed within 250-miles of your facility. For processed foods with multiple ingredients, including breads and other bakery items, only products with the majority of ingredients (>50% by weight) grown/raised and processed within the 250-mile radius may be considered local.

3. In 2012, how many dollars did you spend on local and/or sustainable food served in patient meals, cafeteria, and catering?

(Enter numbers without punctuation, letters or symbols, e.g. 20000 instead of \$20,000.)

4. In 2012 how many pounds of meat did you purchase (for both patient meals and cafeteria)? Meat = beef, pork, poultry, and lunch meat.

(Enter numbers without punctuation, letters or symbols, e.g., 1500 instead of 1,500.)

5. In 2012, how many dollars did you spend on all beverages (for patients, cafeteria, and catering)?

(Enter numbers without punctuation, letters or symbols, e.g. 20000 instead of \$20,000.)

2013 California Healthy Food in Health Care Survey PART 2

6. In 2012, how many dollars did you spend on healthy beverages (for patients, cafeteria, and catering)?

"Healthy Beverages" are identified by HCWH as: unsweetened, water, 100% fruit or vegetable juice, milk (Organic or rBGH), non-dairy alternatives, coffee, and tea.

(Enter numbers without punctuation, letters or symbols, e.g. 20000 instead of \$20,000.)

Additional comments?

7. If you have any comments about our survey or additional information you would like to share, please tell us below.

Thank You

Please click "Done" below, when you are finished with Part 2.

If you are filling out surveys for multiple facilities within a health system from the same computer, please be sure to click "Done" below before moving on to the next facility to ensure that your data is saved.

If you have questions or concerns, please contact Kendra Klein (kleinkec@yahoo.com) or check out our webpage [California Healthy Food in Health Care](#).