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PERCEPTIONS OF LOCAL HOSPITALS AND FOOD PRODUCERS ON
OPPORTUNITIES AND BARRIERS TO IMPLEMENTING A FARM-TO-
HOSPITAL PROGRAM

by
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Thesis

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Perceptions of Local Hospitals and Food Producers on Opportunities and Barriers to Implementing a Farm-to-Hospital Program

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A globalized food system began taking root in the 1970's and now significantly shapes local economies, culture and social contexts of communities across the nation and throughout the world. Although this globalized system has resulted in a disconnect between communities and food, a nation-wide movement is underway to restore local, community-based food systems (O'Hara and Stagl, 2001). Along with institutions such as schools and restaurants, hospitals have particularly begun to engage in the farm-to-institution movement. However, farm-to-hospital efforts are still new and the particular factors impacting the use of locally-sourced foods within the hospital setting are still relatively unexplored.

The purpose of this study was to explore current perceptions and attitudes of local food producers and hospital staff towards incorporating locally-sourced foods into hospital food service programs. Perceived opportunities and challenges to procuring and using local products in the hospital setting were identified. Additionally, perceived enablers and barriers of local producers were identified around working directly with institutions. The goal of this study was to integrate perceptions of producers and hospital staff to develop locally relevant suggestions for strengthening producer-hospital relationships and increase the amounts of local foods in hospital food service programs.

Qualitative data was collected by conducting interviews with hospital staff involved with food procurement and management, as well as with local producers and food distributors. Demographic data was also collected from participants.

Findings resulted in the identification of opportunities and challenges associated with direct working relationships between local food producers and hospitals and the increase of locally-sourced foods in food services. Barriers included price, product availability and quantity while opportunities included positive relationships, product quality, and champion leaders. The integration of results allowed for the development of capacity building suggestions. Such suggestions included the development of aggregated food systems, hospital staff wellness programs and collaborative problem solving processes. Most significantly, this study suggested that efforts to connect producers and hospitals in collaborative dialogue to identify and resolve misconceptions and misinformation may serve to most successfully strengthen Montana's farm-to-institution system and increase the amounts of locally-sourced foods being used in hospital food service programs.

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“The single greatest lesson the garden teaches is that our relationship to the planet need not be zero-sum, and that as long as the sun still shines and people still can plan and plant, think and do, we can, if we bother to try, find ways to provide for ourselves without diminishing the world.”

– Michael Pollan, *The Omnivore's Dilemma: A Natural History of Four Meals*

CHAPTER ONE

Introduction

Introduction to the Study:

The 1970's marks a significant period for the health and well-being of the United States. It was during this time that the nation's agricultural practices began to radically shift to more closely align with the globalizing economy, and shifted from locally-driven food systems to more industrialized and productivity based systems. The processes of food production and distribution are now driven by global demand and supply and are creating a highly monopolized industry (Hawkes, 2006). Such dramatic changes in agricultural practices are resulting in significant consequences to both environmental and human health. Monocrop production is greatly reducing the level of biodiversity and overall resilience of the ecosystem. These changes increase the susceptibility of crops to pathogens and reduce the amount of soil microbes necessary for productive crop growth (Matson, 1997). Reduced crop resistance, loss of soil microbes, and leaching of nutrients has resulted in excessive and inappropriate applications of fertilizers and pesticides, inflicting significant damage to bystander species and polluting air, soil, and groundwater (Horrigan, 2002). These fertilizers and pesticides are also being shown to impact human health, including elevated risk for cancer, repressed immune and reproductive function, and disruption in nervous system function (Horrigan, 2002). Consumption and dietary trends have dramatically changed in response to the globalizing food system and are now strongly correlated with rising rates of cardiovascular disease, type II diabetes and obesity (Horrigan, 2002; O'Kane, 2011). Industrialized agriculture is now also associated with the

growing concern of antibiotic resistance as well as the increase in food-borne illnesses (Horrigan, 2002).

The model and expansion of the globalized food system has shifted local economies, culture, and social context. The farmer share of each food dollar has dramatically declined since the 1950's and prices of commodity foods have decreased by 30-50% since 1985 (Azuma and Fisher, 2001). As market prices decline and production prices continue to rise, small-scale farmers are struggling to compete and the food industry is becoming increasingly monopolized by large corporations. Such a shift towards mechanized, mass-production of food by large scale corporations contributes to a disconnect between communities and their food, a vital component of culture and well-being. This disconnect is now driving a nation-wide movement to revitalize the community based food system. This nation-wide movement is working to reestablish a connection between communities and the food production and distribution process. Programs such as farmers' markets, food cooperatives and community supported agriculture (CSA) are serving to revive partnerships between food producers and consumers and are being found to contribute to stronger local relationships, culture, and economic viability (Gillespie and Smith, 2008; O'Hara and Stagl, 2001).

Studies show that motivation to participate in local food programs arises from concerns relating to the quality and freshness of foods, as well as the importance of supporting local farmers and agriculture (Kloppenburg, Wubben and Grunes, 2008; O'Hara and Stagl, 2001). These concerns and vision of stronger local food systems are beginning to translate into reform at an institutional level. Connecting local farmers with institutions such as hospitals, colleges, and correctional facilities is providing an outlet for small-scale

farms to reach into reliable markets and strengthen the role of local foods within local food systems and economies (Bellows, Dufour, and Bachmann, 2003). For example, farm-to-school programs are a growing initiative in the United States and are continuing to gain momentum as potential for their role in the local food system and community health become more widely understood. Such programs are now contributing to the nutrition education and dietary habits of students, as well as the support of local farmers and agriculture (Azuma and Fisher, 2001).

The 1960's represents a paradigm shift in which environmental and human health were beginning to be viewed as interconnected. This interdependence has resulted in a realization that the health of the food system plays a significant role in the overall health and well being of a community. This holistic model is now not only being supported by environmentalists and advocates of sustainable agriculture, but also by the nation's health care system. As the relationship between sustainable food systems and a healthy community are becoming more clearly understood, the health care system is proving to play a significant role in supporting the return to local food systems. This leadership role stems from the goals and mission of the health care system. In striving to support health and healing, there is a fundamental responsibility to embrace the role of food in human health and well being and support a community's surrounding environment (Cohen, 2006). The health care system is in a unique position of modeling the relationship between food and health through potential influence on food policy reform, nutrition education, and local food economies. The health care system and hospitals across the nation are now role modeling creativity and dedication to the local food system movement. On site farmers' markets and CSA programs, the availability of hormone-free milk and meat products, fair

trade coffee, and compost programs represent only a few of the systemic changes being made within hospital facilities. Since the 2006 inception of Health Care Without Harm's *Healthy Food in Health Care Pledge*, 495 hospitals nation-wide have signed and committed to the pursuit of engaging in healthy, sustainable food practices (Health Care Without Harm, 2013). This initiative now serves as a framework with tools and resources for the health care industry in connecting the health of patients, the community, and the environment with the foods being served in hospital facilities.

The farm-to-hospital movement is still young and lacks formal assessment and evaluation. However, initiatives within the overall farm-to-institution movement are being examined and themes of strengths, as well as challenges, are beginning to arise. Challenges relating to food cost, procurement, and supply are emerging and providing a platform and working framework to begin modifying the processes of farm-to-institution programs to increase the success of these efforts on strengthening local food systems and community health (Kloppenborg, Wubben and Grunes, 2008). Little is known about the specific gaps and opportunities for hospitals to participate in local, sustainable food efforts. One way they might participate is to use locally-sourced food products in their food service meals. Therefore, a formal exploration of current gaps and opportunities experienced by hospitals might enhance discussions about how these institutions may use more locally sourced food ingredients.

Purpose of the Study:

The purpose of this study was to explore current perceptions and attitudes of local food producers and staff at Missoula hospitals towards working together in order to incorporate locally-sourced foods and ingredients into hospital food services. Factors

currently impacting the use of locally-sourced foods in the institutional setting, in either productive or unproductive ways, were identified and then incorporated into a framework to work towards increasing the amount of locally-sourced foods used in hospital food service meals.

Research Questions:

1. How do the two hospitals perceive local food purchasing? How do those perceptions, and their associated individual, institutional, and policy based factors, create barriers and opportunities for hospitals to purchase locally grown foods?
2. How do local and regional food producers and distributors perceive selling to hospitals? How do those perceptions, and their associated individual, institutional, and policy based factors, create barriers and opportunities for food producers to sell their products to hospitals?
3. What knowledge, skills, and resources are needed by hospitals and food producers to increase the amounts of locally-sourced food ingredients in hospital food service meals?

Significance of the Study:

The Healthy Food in Health Care Pledge is one of several initiatives advocating for the incorporation of locally produced foods into hospital food services. Along with environmental benefits and support to the local economy, such a transition to local foods and healthy menus work to achieve congruency in the quality of care provided to patients in the hospital setting. Four hundred ninety five hospitals across the nation have already signed on this pledge (Health Care Without Harm, n.d.). While Missoula exemplifies a locally-based city through initiatives such as farmers' markets, community supported agriculture, community gardens, and farm-to-school programs, only one hospital in the

Missoula region (and in Montana) has officially joined the movement. One hospital, out of 65 in the state, 2 in the county, and 8 others in surrounding counties, has signed the Healthy Food in Health Care Pledge (the Agape Center, 2010). Such a statistic suggests there are significant factors currently perceived as obstacles for regional hospitals in using locally-sourced ingredients in their food service programs.

The model of a farm-to-hospital program is one of new conceptual framing and development. Farm-to-hospital programs have only begun to gain ground in the past decade. Exploring specific barriers and challenges that hospitals face in supporting local food systems would be an important step to developing a framework that identifies ways to increase the amount of locally-sourced foods that hospitals use in their food services. An essential component is to integrate, through data-rich interviews, the perceptions of both local producers and health care institutions into a single study in order to produce a more comprehensive situational assessment.

Delimitations:

The delimitations of the study were as follows:

1. The study was delimited to local food producers located in Missoula and food distributors located in the surrounding regional area within a 200 mile radius.
2. The study was delimited to hospital staff currently working at one of the two main hospitals in Missoula, Montana in 2013-2014.
3. Data was collected by interviews
4. The study was further delimited to local food producers, distributors, and local hospital staff who voluntarily took part in the interview process.

Limitations:

The limitations of the study were as follows:

1. The data was limited in that the individuals from the target population who volunteer to participate in the interviews may have different issues and concerns compared to those who chose not to participate. Therefore, the study was limited by how well the participants in the study represent the population.
2. Due to the nature of the work of the target population, finding time for individuals to participate in the interview process was challenging.
3. The study was limited by the assumption that hospital staff, producers, and distributors perceive local food to be healthier. Using locally-sourced foods theoretically suggests that these foods have required less processing. Local food may also tend to be associated with products that are organic or pesticide-free. These assumptions therefore suggest benefits to the health of patients, staff and visitors at the hospital. Quality of local foods, however, is not guaranteed as greater than the quality of non-local foods. Additionally, such health benefits may also be achieved by generally using more whole foods in food service meals.

Definition of Terms:

Community Based Food System: A food system in which everyone has financial and physical access to culturally appropriate, affordable, nutritious food that was grown and transported without degrading the natural environment, and in which the general population understands nutrition and the food system in general (American Planning Association, 2008).

Community Supported Agriculture: Members, or "share-holders," of the farm or garden pledge in advance to cover the anticipated costs of the farm operation and farmer's salary. In return, they receive shares in the farm's bounty throughout the growing season, as well as satisfaction gained from reconnecting to the land and participating directly in food production (United States Department of Agriculture, 1993).

Economy of Scale: Reduction in cost per unit resulting from increased production, realized through operational efficiencies. Economies of scale can be accomplished because as production increases, the cost of producing each additional unit falls (Investor words, 2014).

Farmers' Market: A farmers market operates multiple times per year and is organized for the purpose of facilitating personal connections that create mutual benefits for local farmers, shoppers and communities (Farmers Market Coalition, 2010).

Food Service (Food Service Meals/Food Service Programs): The business of making, transporting, and dispensing prepared foods, as in a restaurant or cafeteria (The American Heritage Dictionary, 2013).

Food System: Comprise all aspects of food production (the way the food is grown or raised; the way the food is harvested or slaughtered; and the way the food is processed, packaged, or otherwise prepared for consumer purchase) and food distribution (where and how the food is sold to consumers and how the food is transported) (Grace Communications Foundation, 2013).

Group Purchasing Organization (GPO): An entity that helps healthcare providers — such as hospitals, nursing homes and home health agencies — realize savings and

efficiencies by aggregating purchasing volume and using that leverage to negotiate discounts with manufacturers, distributors and other vendors (Health Care Supply Association, 2012).

Grower Cooperative (Coop/Co-op): Grower cooperatives depend on a group of producers joining forces and, in return, obtaining bargaining power. Additional benefits include cost savings associated with producing and/or processing larger quantities (University of Kentucky College of Agriculture, Food and Environment, 2014).

Industrial Agriculture: Industrial agriculture emphasizes "inputs" (pesticides, fertilizers) and "outputs" (crops). The end-objective is increasing yields while controlling costs, often through the replacement of manual labor with machines and petro-chemicals (PAN North America, n.d.).

Local Food System: A method of food production and distribution that is geographically localized, rather than national and/or international. Food is grown (or raised) and harvested close to consumers' homes, then distributed over much shorter distances than is common in the conventional global industrial food system (Grace Communications Foundation, 2013).

Western Montana Growers Cooperative (WMGC): A coalition of growers in the Flathead, Jocko, Mission and Bitterroot Valleys whose goal is to provide the market in our region with fresh, quality products from our farms. To reach that goal, the cooperative provides a wholesale marketing and delivery service for its members (Western Montana Growers Cooperative, 2013).

CHAPTER TWO

Review of Literature

Globalization on Our Food System

Our food system and agricultural techniques have been experiencing a dramatic shift since the 1970's. This shift is deeply rooted in the growing trend of globalization, an effort to unite the world in an industrialized and economically efficient system. Integrating the food system into this global, capitalistic economy has radically altered the way in which our food is produced and distributed (Lyson & Green, 1999). This industrialized model now dictates the types of food being produced, as well as the quantity and quality (Hawkes, 2006). Altering food production and distribution on such a massive scale further impacts overall food access and availability. Similar to other industries moving into the globalizing economy, the food industry has experienced modifications that reflect transnational trade and large-scale investments. International food companies, increased foreign investment and the growing abundance of trade agreements and investment treaties demonstrate the effects of a unified economic system (Hawkes, 2006). Food production and distribution is now directly dictated by global demand and supply, and is becoming an increasingly monopolized industry. Such significant changes to our food system have produced a wide variety of effects, both on environmental health and human health, and are summarized in the following review.

Environmental Impacts:

Food production techniques evolved to increase productivity in order to meet the demands for agricultural commodities in the growing mass market. Increasing productivity and food production efficiency resulted in the streamlining of agricultural

practices. Such streamlining has translated into the exploitation of each region's particular agricultural strengths. Rather than fostering crop diversity, agricultural practices have transformed into a monocrop system (Lyson & Green, 1999; Tilman, 1999; Matson, Parton, Power, & Swift, 1997; Horrigan, Lawrence & Walker, 2002). Monocrop systems significantly decrease the level of biodiversity within the area in both obvious and less obvious ways and reduce the overall health and resilience of the ecosystem. Reducing the variety of plant species in pursuit of high yield crop production impacts the composition of insect populations as well as soil invertebrate and microorganism populations (Matson et al., 1997). Pest densities tend to increase in monocrop systems where genetic resistance is significantly lower compared to diversified crop systems, increasing the risk for endemic pest or disease infestations. Along with increased susceptibility to infestation, monoculture ecosystems are also associated with higher levels of leaching and loss of nutrients due to the scale at which crops have homogenous nutrient demands.

Increased susceptibility to infestation and leaching loss of nutrients has resulted in the widespread use of fertilizers and pesticides. Massive monoculture ecosystems eliminate soil inhabitants supporting the natural life support cycles of soil turnover and organic matter replenishment, leaving fields devoid of particularly vital nutrients such as nitrogen and phosphorus. Since the 1960's, fertilizers have been readily applied to counter the leaching of these nutrients (Matson et al., 1997; Tilman, 1999). Excessive and inappropriate application practices results in the incomplete absorption of fertilizers by crops, leaving the remaining nitrogen and phosphorus to settle in the soil unused. This remaining fertilizer promotes the growth of plant pathogens, contaminates groundwater and can be transported to nearby water sources, greatly increasing the concentration of

nitrate in drinking water. The accumulation of nitrates in water sources can cause eutrophication of the marine ecosystem, reducing levels of oxygen so severely that harmful algae blooms can occur and diminish fish and shellfish populations (Horrigan et al, 2002; Matson et al., 1997). Elevated nitrates in water also impacts human health and has been associated with the blood disorder, methemoglobinemia. Excessive pesticide applications also result in inadvertent contamination through water and air transport, impacting not only the target pest, but a wide variety of species both in the cultivated fields and the surrounding area.

The changes in agricultural practices in response to an industrializing food industry have resulted in an interconnecting network of environmental effects. Monocrop farming has reduced the level of biodiversity in these ecosystems, decreasing genetic variance and crop resistance, as well as insect and soil microorganism populations. Nutrient leaching and pest susceptibility has resulted in prolonged and excessive applications of fertilizers and pesticides. Such chronic chemical applications are now resulting in the destruction of bystander species, degradation of soil quality, and pollution of groundwater and drinking water sources. Water sources are additionally abused through irrigation systems that drain water sources and below-ground aquifers to redirect water to fields at unsustainable rates (Horrigan et al, 2002). Ultimately, the industrialized agriculture systems has developed at the cost of our surrounding environment and its naturally occurring cycles of re-growth and rebalance.

Human Health Impacts:

The globalizing food system has indirectly, and directly, negatively impacted the natural environment, surrounding landscapes, water, wildlife and human health. The

industrialized agricultural food system has had significant effects on human diet worldwide. Through control over the foods and products selected for mass production and distribution, consumption and dietary patterns have adapted to reflect these trends. The adoption of modified foods, such as vegetable oils, high fructose corn syrup and processed grains, has shifted caloric sources and intake and has altered levels of saturated fats in the diet. The increasing intake of cholesterol, saturated fats and sugars in the American diet are all contributing to high rates of cardiovascular disease, type II diabetes, and the rising average body mass index (Horrigan et al, 2002; O’Kane, 2011).

Widespread use of pesticides has significant negative impacts on human health. Long term exposure to pesticides (through ingestion and/or dermal contact) is associated with effects including elevated risk for cancer, repressed immune and reproductive function, as well as disruption in nervous system function (Horrigan et al., 2002). Factory farming, a production method in which extremely high concentrations of livestock are managed within an inadequate amount of space, impacts human health as well. Factory farm workers, as well as people residing within close proximity of these farms, have experienced elevated levels of respiratory disease (Horrigan et al., 2002). Foodborne illness is also associated with the use of factory farming and increased consumption of meat products. Nearly 76 million foodborne illnesses occur in the United States each year as a result of consuming meat products contaminated with bacteria (Horrigan et al., 2002). Crowded conditions of factory farming, along with the mechanized and efficient process of slaughter, contribute to increased risk for undetected contamination (Horrigan et al., 2002). *Campylobacter* and *Salmonella* currently contribute to nearly three million

foodborne illnesses in the U.S. each year, and the prevalence of *E. coli* and *Listeria* are rapidly increasing as well (Horrigan et al., 2002).

Also associated with the consumption of factory raised animals is the increased risk for antibiotic resistance. Nearly 70% of antibiotics produced in the U.S. are administered to livestock in order to promote growth and prevent disease (Horrigan et al., 2002; Landers, 2012). Such excessive use of antibiotics increases the likelihood that drug resistant strains of disease will evolve. Such strains can then potentially be transmitted to humans through the food supply, thereby causing life threatening illness and even death. The incorporation of genetically modified foods (GMO's) serves as another potential health concern. Long term exposure to GMO's is still poorly understood. However, the blending of different genes creates the potential for an introduction of new allergens into the food supply. As genes are further spliced into a genome to create a crop that is resistant to pathogens or dry or colder climates, materials used in this genetic engineering may include organisms not previously consumed by humans (Horrigan et al., 2002). As the food industry has become more efficient, specialized, and incorporated into the global economic system, the quality and safety of our food supply becomes further and further compromised. Such a globalized food system has thereby resulted in higher risk for cancer, suppressed immune systems, foodborne illness and an increase in nutrition-related chronic disease.

Local Food Systems and Locally Driven Initiatives

Returning to Locally Based Food Systems:

“A community-based food system is conceptualized as one where all of the components are localized to a particular place. Community food systems ultimately aim to attain food security (for individuals as well as entire communities), relational proximity, self-reliance, and sustainability” (Byker, B.C., Shanks, J. & Serrano, E., 2012, p. 39).

The industrialized food system has resulted in a wide array of interconnecting side effects that have significantly impacted the health and well being of both the environment and humans. However, health alone is not the only aspect of human life that has been affected by this drastic shift in agricultural practices. Globalizing the food system has shifted local economies, culture and social context. The farmer share of each food dollar has dramatically declined, beginning with an average earning of 41 cents in 1955, decreasing to only 20 cents in 1999 (Azuma and Fisher, 2001). Commodity food prices have decreased by 30-50% since 1985, further stressing the potential profit margin of small-scale farmers. The globalized food system has resulted in a monopolized industry in which economic conditions are extremely challenging for small, private farms to compete in. As market prices decline and production costs rise, large corporations with substantial financial resources and capabilities continue to expand while small-scale farms are forced out of the market (Azuma and Fisher, 2001; O'Hara and Stagl, 2001). It's this growing disconnect between communities and these large scale food production corporations that is driving a nation-wide movement to revitalize the community based food system.

Initiatives arising from a community based food system model are working to reconnect communities with the food production and distribution process. Direct marketing arrangements, such as farmers' markets and CSA's, revive working partnerships between food producers and food consumers. Such direct interactions provide the opportunity for the food cycle of production to consumption to take place in a manner that is both cost-effective and environmentally sound (Gillespie and Smith, 2008).

Reconnecting food producers and consumers not only strengthens local relationships and culture but also supports local economic viability by encouraging local spending (Gillespie

and Smith, 2008; O'Hara and Stagl, 2001). Community based initiatives have gained momentum since the 1990's and have continued to evolve in efforts to reverse the globalized food system. A review of the literature by O'Hara and Stagl (2001) suggests such development in this locally-based model strongly demonstrates the nation's growing discontent with the current system of industrialized agriculture.

Direct Marketing Initiatives:

Locally based initiatives and direct marketing arrangements are gaining momentum and reflect growing discontent with the current industrialized model of agriculture. The U.S. Department of Agriculture reported that the number of farmers' markets operating throughout the U.S. rose from 1,755 in 1994 to 5,274 markets in 2009 (Francis and Griffith, 2011). Interest in locally grown foods has resulted in this widespread growth of farmers' markets and further reflects the nation's rising concern over food source and quality (Byker et.al, 2012; Francis and Griffith, 2011; O'Hara and Stagl, 2001). A national study conducted by the Hartman Group in 2007 concluded that a primary motivation for people to purchase locally grown foods was a belief that local foods are healthier (Hardesty, 2008). Another study conducted by Wolf and colleagues (2005) more specifically explored motivations to shop at a local farmers' market. Interview data suggested that consumers perceive produce at farmers' markets to be fresher, healthier and higher quality compared to non-local produce bought at a conventional supermarket. Such perceptions are therefore motivating more people to shop at local farmers' markets to purchase produce (Alonso and O'Neil, 2010; Hardesty, 2008; Wolf et. al, 2005).

Farmers' markets, food cooperatives and CSA's are all examples of the direct marketing initiatives that are gaining momentum in the rebuilding of local food systems.

Community supported agriculture programs is another alternative food market model that's beginning to contribute to local food systems. CSA's connect local consumers and producers by offering consumers the opportunity to purchase a share of the farmer's produce. Purchasing shares upfront supports farmers in production costs (O'Hara and Stagl, 2001). Members then receive a portion of produce each week based on the particular season and growing conditions. In this way, some of the risk of farming shifts from the producer to the consumer, serving to help revitalize a community's food culture and connection with the cycle of food production to consumption. A survey of 74 CSA member households in northern New York explored the various motivations for participating in a CSA program. The top ranked priority for participation was a desire to purchase fresh produce. The third highest motivating factor to participate in a CSA was to support local farmers (O'Hara and Stagl, 2001). Other motivating factors related to physical, environmental, and social reasons. Such social concerns related to the desire to regain a connection with local farmers and to recreate the food system as a piece of local culture. A large study conducted in Oregon compared survey results of 250 CSA member households in two different communities. Although education and employment rates varied between the two communities, attitudes and motivations towards CSA participation were very similar. Survey results concluded that one of the most primary motivations was due to concern for supporting local farmers. Members even admitted to a willingness to pay more for locally produced foods (Stephenson, 2004).

Farm-to-Institution Programs:

Direct marketing initiatives are now expanding from the farmers' markets and CSA programs model. Connecting small, local farmers with local stores and institutions is

...serving as another outlet for farmers to gain access to reliable and stable markets.

Expanding into larger institutions such as hospitals, colleges, and restaurants is providing an opportunity for local foods to play a more influential role within local food systems and contribute as greater investment of food dollars into the local economy (Bellows, Dufour, and Bachmann, 2003). A study conducted by Alonso and O'Neill (2010) revealed that nationally growing interest in local foods is now significantly influencing the restaurant industry. Study results showed a key motivator for restaurant owners to purchase more locally-based produce and ingredients comes from their perception that local foods are much more superior in taste and in quality. This perception, along with a growing customer demand for local cuisine has contributed to a slow shift in the restaurant industry to using locally sourced foods (Alonso and O'Neill, 2010). The National Restaurant Association has conducted a series of surveys with members of the American Culinary Federation. A 2007 study revealed that 90% of the 1,282 chefs surveyed believed that the demand for locally sourced food items would increase in the future. A follow-up survey conducted in 2008 reported that the 1,609 participating chefs identified the use of locally grown produce as the top trend in 2009 restaurant menus (Alonso and O'Neill, 2010).

Farm-to-school programs are one significant outcome of the local food system movement and its associated farm-to-institution initiatives. Only two percent of school-aged children are estimated to meet the USDA nutritional recommendations across all five food groups. Additionally, 84% of students are consuming excessive levels of fats and sugars, contributing to the rising prevalence of obesity and type II diabetes in children (Kloppenburger, Wubben, and Grunes, 2008). Farm-to-school programs are therefore being more widely considered to target two key aspects of nutrition faced by the U.S., that of

deteriorating diet and nutritional education in children, as well as the growing local food movement (Azuma and Fisher, 2001; Kloppenburg et. al, 2008). The Community Food Security Coalition estimated that in 2008 there were farm-to-school programs in over 1,000 school districts in 32 states. Farm-to-school initiatives are also being implemented in higher education facilities across the nation, further contributing to the local food system and economy. School administrators are recognizing these programs as realistic and attainable aspects of a more holistic model to improve child and community health. Farm-to-school programs are becoming commonly viewed as significant experiential learning opportunities for students in fostering nutritional knowledge and understanding, educating on local food production and consumption, and even in shifting dietary habits towards more healthful choices (Kloppenburg et. al, 2008).

Farm-to-school programs are now being viewed as a piece of a holistic paradigm of individual and community health. In a study interviewing 28 key stakeholders in two Pennsylvania schools with farm-to school programs, several main themes arose. The 2009 study conducted by Bagdonis and colleagues revealed three broad frames of motivation for supporting farm-to-school programs. Participants perceived these programs as addressing the weakened local food environment, supporting improved nutritional choices and revitalizing the surrounding community through support of local agriculture. As stated in a 2001 evaluation report by the Community Food Security Coalition,

“Farm-to-school projects fit squarely within the broader conceptual framework of community food security. Community food security, a relatively recent concept linked to anti-hunger, sustainable agriculture and community development goals, refers to a system approach to addressing the nation's food and farming problems” (Azuma and Fisher, 2001, p. 10).

This attitude closely reflects the attitudes of participants of farmers' markets and CSA's, representing the national movement towards healthier, fresher foods, increased education in nutritional needs and habits, improved health and well-being, and support for local farmers and agriculture.

Local Food in Our Health Care System

Health Care in the Local Food System Movement:

Rachel Carson triggered the environmental movement in the 1960's, a movement that represented a paradigm shift towards a broader, holistic perspective of health. This paradigm shift embraced a relationship between environmental health and human health and a revelation that advocated for the health of the food system as an active component of overall human health and well being (Sachs, 2011). This connection between a healthy ecosystem and healthy community has become a predominant platform for people advocating for local, sustainable agriculture systems. However, not only are environmentalists embracing this connection, but the health care system has begun to formally explore this relationship as well. The timeframe between 2005 and 2009 is being recognized as the developmental period in which the health care system began to explore a relationship between food systems and human health (Harvie, Leslie, and Shak, 2009). Major health care organizations, including the American Public Health Association, American Medical Association, and the American Nursing Association, are beginning to officially make statements on the relationship between food production and health (Dauner et. al, 2011). This convergence in beliefs among environmentalists and the medical health field reflects the growing support for a more systems-based approach to improving the encompassing health and well being of our planet and its inhabitants.

The health care system is emerging as an increasingly significant leader in the exploration of the relationship between healthy, sustainable food systems and healthy communities. Hospitals have been participants of the globalized food system that relies on production and distribution methods that are harmful to both public health and environmental health. Hospitals serve as a place of healing and re-growth. As such, there is an intrinsic responsibility to provide foods that are healthful and supportive of people and the larger community's surrounding environment (Cohen, 2006; Dauner et. al, 2011). This realization is working to diminish a disconnect that has been long established in the health care system: While processed or preservative-filled foods may be served to patients while healing in the hospital setting, consumption of quality, nutritious foods is directly related to an individual's health (Cohen, 2006). The health care system is in a unique position to serve as a leader in food policy reform and the shift towards local, sustainable food systems. The health care system can serve as a role model by creating healthy food environments in hospitals and educating patients, staff, and visitors on the connection between food production practices and health. Additionally, the purchasing power of health care food procurement budgets has the potential to greatly influence and support local food systems (Dauner et. al, 2011).

Health Care on Public Health:

“Individual health cannot truly be realized independent of public and environmental health. Similarly, public and environmental health depend to a large degree on the health of individuals” (Schettler, 2006, p. 128). The health care system organically fits within this broader system's approach to health through supporting the relationship between healthy food systems and healthy communities. The health care system has played a role in health

reform on numerous accounts, demonstrating its influential capabilities in initiating policy reform and improvements in public health. For example, it had a significant role in advancing formal policy to remove lead from paint and fuel. The health care system also exerted leadership in outreach campaigns warning the public of the dangers of tobacco smoking. Hospitals and the health care system modeled the first smoke-free environments and have worked to comprehensively eliminate mercury use by the public and health care system as well (Harvie et. al, 2009). Such historical impact on public health policy further supports the farm-to-hospital movement in which the health care system may strengthen the local food system and overall health of community members.

This leadership is now being emulated by shifting towards local food systems to support health and healing. The health care system is working to change hospital food services by exerting its influence and impacting group purchasing organizations (GPO's). GPO's act as prime vendors for hospitals, and contracts usually require that 90-100% of a facilities total food purchasing be organized through the contractor. In 2004, the top health care GPO contracts purchased approximately \$2.75 billion worth of food and the total health care market spent nearly \$12 billion (Harvie, 2006). Health care system purchasing power is therefore quite significant, and by demanding higher quality, local foods, momentum is being created within GPO's to shift towards more sustainable and local producers and distributors.

Shifting from Treatment to Preventative Health Programs:

As the relationship between the health care system and local food systems has progressed, hospitals across the nation have inspired creativity and ingenuity in realizing this needed paradigm shift. On-site farmers' markets and stands are being implemented in

hospitals across the country in order to serve patients, staff, and even the wider community. Farmers' market programs, while varying in size, time of operation and target populations, all tend to target nutrition education and increased access to local, fresh foods (Kulick, 2005). Fourteen Kaiser Permanente facilities throughout California, Hawaii, and Oregon host farmers' markets. The National Institute of Health in Maryland has served as a leading role model in this initiative, as this facility has hosted farmers' markets for over 20 years. Duke University Medical Center offers a stand for employees and Allen Memorial Hospital in Iowa offers a farmers' market open to both hospital staff and patients, as well as to the general public and surrounding community (Kulick, 2005).

At the individual level, health care and hospital facilities have implemented programs requiring varying degrees of change and commitment. For example, Good Shepherd Medical Center in Oregon has eliminated fat fryers, serves organic produce and rBGH-free milk, and has also substituted beef with the healthier and leaner alternative of bison. Cancer Treatment Centers of America have placed a priority on reducing exposure of patients to toxins and preservatives by emphasizing the use of organic foods and produce (Kulick, 2005). St. Luke's Hospital in Duluth, Minnesota has served as a leading role model through its expansive system modifications, including comprehensive shifts to Fair Trade coffee, organic fruit and rBGH-free milk. A local, organic-based salad bar is available in the cafeteria and a compost and food-recovery program for unused food has been implemented as well. Fletcher Allen Health Care of Vermont has also played a leading role with efforts starting over 15 years ago. A patient menu emphasizes fresh, local items and offers organic produce, hormone-free milk and Free Trade coffee. A comprehensive compost and food-recovery program has been well established and employees have the

opportunity to enroll in an on-site CSA program (Harvie, 2006). Finally, healthy vending is yet another example of efforts by the health care system to support health through nutrition. While vending machines serve as convenient access to snacks, options are often high in sugar and fat. Santa Rosa Memorial in California is just one example in which efforts are being made to shift this commonality by offering organic, microwave-ready meals, as well as more nutritious and portion-appropriate options (Harvie, 2008). Such variance in programs and efforts demonstrates how moving towards local food systems occurs on a continuum with a broad spectrum of opportunities and options.

Healthy Food in Health Care Campaign:

One key manifestation of the farm-to-hospital movement is the Healthy Food in Health Care campaign. Health Care Without Harm's Healthy Food in Health Care campaign is an initiative for hospitals to pledge pursuit of, and engagement in, a healthy and sustainable food system model. This initiative began in 2006 and serves as a framework for the health care industry in connecting the health of patients, the community, and the environment with the food that is served in hospitals (Health Care Without Harm, 2008). The framework provides resources, education, and support in realizing changes in food service programs and offers a tiered system in which these changes can be aspired to in realistic and successful ways. The pledge contains nine core components that participants commit to, including the implementation of a working framework to achieve more sustainable, local food procurement; communication with local farmers and community-based organizations; dialogue with vendors and GPO's in offering more local, healthful foods; and educating hospital staff and patients on the benefits and importance of local and sustainable food practices (Health Care Without Harm, 2008).

A 2008 study conducted by Health Care Without Harm stated that “across the country, health care organizations are implementing policies and programs that demonstrate a commitment to “First, do no harm” by treating food and its production and distribution as preventative medicine that protects the health of patients, staff, and local and global communities” (Harvie, 2008, p. 3). This sentiment is now being reflected throughout the health care system. Since the founding of the initiative in 2006, Health Care Without Harm has gained the support and commitment of 495 hospitals nation-wide. The 2008 study surveyed Pledge signers to identify initiatives and models being used. Survey results showed that 72% of pledge signers were purchasing local or organic foods, most of which appropriated 10-40% of food procurement budgets to these types of foods. Eighty one percent of respondents were purchasing rBGH-free milk and 44% were purchasing antibiotic and hormone free meats. Additionally, 25% of Pledge signers had established a farmers’ market or stand on-site, 60% had established composting programs, and 100% of respondents reported an increase in the amounts of fruits and vegetables being incorporated into meals (Harvie, 2008).

Healthy Food in Health Care Pledge Initiatives: The Healthy Food in Health Care Pledge aims to provide flexibility and tools to allow for varying levels of change, thereby providing room for creativity and success in pursuit of modeling sustainable, locally-based health and healing. With such flexibility and room for customized programs, hospitals are able to invest varying degrees of commitment based on their particular capacity for change. Such flexibility creates endless possibilities in pursuing the tenets of the pledge. For example, Catholic Healthcare West System (CHW) consists of 42 treatment facilities in three states and has served as a leading role model in aspiring to, and fulfilling, the Healthy

Food in Health Care Pledge. CHW has taken a holistic, systems-wide approach to implementing its sustainable food goals. CHW produce contracts are now selected and awarded based on a criterion of being locally sourced. Fair Trade coffee is now emphasized at many sites and bottled water has been greatly reduced (Harvie, 2008). CHW is also working with contracting vendors to shift towards reusable packaging and away from cardboard and plastics. Biodegradable serviceware is also being used at many of the CHW health care sites, as well as redesigned patient menus and on-site gardens (Harvie, 2008).

Bartels Lutheran Retirement Community serves as another example of the commitment of health institutions to local, sustainable food models. This Iowa retirement facility has been building its sustainable health model since 2000 and now sources over 25% of its annual food procurement from local farms and producers (Harvie, 2008). Dairy and beef are now locally sourced and contributed to the \$70,000 that was put back into the community's economy through the purchasing of local foods. A composting program was initiated in 2008 along with the increased use of biodegradable and reusable serviceware. Since 2000, Bartels Lutheran Retirement Community has placed an emphasis on expanding sustainability efforts and has advocated for continued support of the health of its residents and of the local economy and environment (Harvie, 2008).

Fletcher Allen Health Care (FAHC) of Vermont was one of the first hospitals to sign the Healthy Food in Health Care Pledge, although the facilities have been involved in sustainability efforts for over 20 years and models lasting commitment to the farm-to-institution movement (Fletcher Allen Health Care, 2013). FAHC implemented a Nutrition Plan in 2007 emphasizing a renewed commitment to establishing relationships with local producers. FAHC has fostered relationships with local fruit, vegetable, and beef producers

and has established an on-site farmers' market program (Harvie, 2008). FAHC has a well established composting program and redesigned patient menus in 2005 to further emphasize local, fresh ingredients (Kulick, 2005). Along with general menu modifications, a room service program in which patients are able to select a meal of their preference has also been initiated, and has greatly contributed to a reduction in food waste and improvement of the patient experience (Fletcher Allen Health Care, 2013). FAHC has demonstrated commitment to local producers through contracts with businesses such as Cabot Creamery for cheese and other dairy products and Green Mountain Coffee Roasters for fair trade coffee. In addition to these efforts, FAHC has worked with vendors to implement the use of more reusable packaging, complete shift to local beef and continuation of the on-site CSA program for employees (Harvie, 2008).

Current Challenges of Farm-to-Institution Initiatives:

The farm-to-institution movement is still establishing roots and a place within the United States' health care system and therefore has had limited formal program assessment and evaluation. However, various programs within the farm-to-institution movement have been examined and common themes are beginning to emerge. Similar challenges and barriers are being identified across various institutions as an increasing number of organizations, facilities, and businesses become engaged in the local, sustainable food movement. Such themes offer a platform to begin fine tuning the processes of implementing farm-to-institution programs.

Kloppenburg et al. (2008) conducted a literature review on the implementation of farm-to-school programs and also assessed the Wisconsin Homegrown Lunch program in three schools of the Madison Metropolitan School District. These three schools

implemented an experiential program to connect students with local farmers. This educational component was well received by students and increased awareness and appreciation about local foods and the work of local farmers (Kloppenburg et al., 2008). The second component of the program was to “link the land with the classroom,” and was developed with much greater effort and challenges. Three core challenges that emerged around implementation of a farm-to-school program pertained to cost, procurement, and supply, and closely reflected challenges identified in the literature and other assessment studies. Schools are often under very strict budgets and may therefore struggle with paying additional costs for local and sustainable ingredients. Such restrictions on time and money have resulted in the common preference of contracting with one primary distributor that can ensure quality foods in the appropriate quantities and at the agreed upon delivery dates (Izumi et. al, 2010).

Procurement of local or sustainable foods and ingredients serves as another significant challenge to institutions working to shift their food models. For example, Kloppenburg et al. (2008) reported that the three schools participating in the Wisconsin Homegrown Lunch program were required to purchase at least 80% of their food from their contracting GPO, limiting the degree to which local foods may constitute daily meals. A 2002 survey of 66 institutions and 18 restaurants in Iowa identified several of the top challenges to be related to procurement of local foods. Year round availability in regions with shorter growing seasons has been identified as a challenge to menu preparation and was identified through the surveys as the top concern for both restaurants and institutions (Strohbehn and Gregoire, 2002). Local and state regulations, adequate supply, quality of local foods, and the need to work with multiple vendors were also noted in the Iowa survey

(Strohbehn and Gregoire, 2002). Where contracting with a GPO allows for nearly all food to be sourced from one distributor, the resources required to identify, collaborate, and contract with multiple local vendors has been widely sourced as a significant challenge to initiating a local food program (Hardesty, 2008; Kloppenburg et. al, 2008; Vogt and Kaiser, 2008). This current challenge can be summarized by the following description of food services in the United States:

“Buying food directly from individual farmers departs substantially from dominant school food procurement practices. School food service professionals operate under extremely tight time and budget constraints. These conditions favor “broadline” distributors—essentially one-stop-shops which carry nearly all of the food, supplies, and equipment needed to operate a food service kitchen—that are able to offer competitive prices, financial incentives, streamlined service, and the convenience of buying food and non-food items” (Izumi et. al, 2010, p. 336).

A case study in 2010 explored the attitudes and perceptions of restaurant owners on buying local foods and supporting the local food system. While limited research has been conducted on the degree to which these particular institutions are currently participating in local food efforts, perceived challenges and benefits closely resemble those being identified in farm-to-school and farm-to-hospital programs. In this 2010 case study, 21 interviews with small restaurant owners and managers revealed that predominant challenges included the additional resources of time, knowledge, and money required to shift away from large-scale distributors to use more locally-sourced ingredients (Alonso and O’Neill, 2010). Seasonality of local produce was also cited as a significant challenge. Previous negative experiences in attempting to procure local foods, as well as a lack of knowledge around the creation of partnerships and contracts with local farmers, were also identified as challenges to farm-to-institution programs (Alonso and O’Neill, 2010). A study conducted by Strohbehn and Gregoire (2003) assessed perceived barriers of 10

foodservice institutions in central Iowa to using local foods, and reflected similar concerns, including timely delivery, food safety and convenience of contracted distributors.

Themes of challenges and barriers facing the farm-to-institution movement are being found to span across various types of institutions. These themes are also being supported in studies assessing the farm-to-hospital efforts. Dauner and colleagues (2011) conducted interviews at St. Luke's Hospital in Duluth, Minnesota to gain insight into how the hospital culture has worked in different ways to facilitate or hinder the process of making changes towards sustainability. St. Luke's Hospital signed the Healthy Food in Health Care Pledge in 2006, committing to healthful and sustainable food procurement practices, waste management, and reuse procedures (Think Globally, Eat Locally, 2008). The study consisted of 25 semi-structured interviews with key individuals in food acquisition, preparation and service. These key participants included: Hospital administrators, the CEO, vice presidents, a resource consultant, representatives of the hospital's contracting GPO, the director of hospitality services, dieticians and marketing specialists. Significant challenges pertained to going off contract with a GPO that provides incentives for purchasing a majority of items from specific vendors and distributors (Dauner et. al, 2011). Interviews provided a map of current challenges faced by the health care industry in aspiring to local, sustainable food service programs. Other barriers identified at St. Luke's Hospital included a general lack of human, physical, and financial resources to focus on such systemic changes, the inability of local farmers to cultivate and provide sufficient quantities of produce, and the financial logistics of purchasing from several different food producers and distributors (Dauner et. al, 2011).

Perceptions of Local Food Producers and Institutions on a Direct Relationship:

Perceptions of local food producers and institutions in establishing direct relationships most often occur in separate studies. Several studies with similar design, exploring either perceptions of producers or institutions through questionnaires, closely reflect one another in identified benefits and barriers. Researchers Gregoire, Arendt and Strohbahn (2005) conducted a study to explore the perceptions of Iowa producers around marketing to local restaurants and other food service institutions. One hundred fifty one producers participated and completed the survey to identify current barriers and opportunities to marketing and working with local restaurants. The greatest benefits that producers perceived from selling directly to restaurants and other institutions included supporting local farmers, providing fresher food, and shorter travel distance (Gregoire et al., 2005). Survey results also indicated that greatest challenges for producers to work with institutions included year-round availability, lack of a dependable market, ability to change or lower prices of products, communication with the food buyer and the ability to produce demanded quantities (Gregoire et al., 2005).

A more recent study reflects similar perceptions, but explored hospitality institutions using local foods in their food service meals. Two in-depth interviews were conducted at limited service and full service hotels. To supplement this rich data, 40 questionnaires were completed by other hotels throughout Iowa. Interview data identified the greatest benefits perceived by hospitality food service managers as being freshness; supporting local economy; relations with local farmers; price; and taste. Greatest obstacles were perceived as including inconsistent quality; multiple contacts; seasonality; and

inadequate quantity (Kang, 2012). Questionnaire data from this study closely mirrored these perceptions and strengthened conclusions.

Researchers Gregoire and Strohbehn (2002) conducted a similarly structured study examining perceptions of Iowa school systems around working with local producers to source local foods. Two hundred thirty seven questionnaires were completed by school food service management across the state. Good public relations, supporting the local economy, ability to purchase smaller quantities and fresher food, and knowing the product sources were identified as significant benefits for school systems in sourcing local foods (Gregoire and Strohbehn, 2002). Primary challenges, however, were perceived as relating to the lack of availability of foods year-round, ability to obtain adequate quantities, local and state regulations and the need to work with multiple vendors (Gregoire and Strohbehn, 2002).

Conclusion

Farm-to-hospital initiatives are being implemented nation-wide and the health care system is taking a leading role in shifting industrialized agriculture in the U.S. towards more local and sustainable food models. A young movement translates into very limited assessment and evaluation on these models and initiatives. Little is yet known about the gaps and opportunities that exist specifically for the health care system in connecting local growers with hospital food service programs. Additionally, studies with similar goals primarily utilize surveys and other forms of questionnaires, and also focus either on perceptions of producers or perceptions of institutions (vs. a combined, cross-analysis). Therefore, it would be beneficial to conduct extensive, qualitative interviews integrating the perceptions of local food producers with the perceived gaps and opportunities existing

specifically for hospitals in incorporating locally-sourced foods and ingredients in food service meals.

CHAPTER THREE

Methodology

Purpose of the Study:

The purpose of this study was to assess the perceptions of hospital staff and local food producers and distributors on opportunities and challenges to increasing the amounts of locally-sourced foods used in hospital food service programs. From this assessment, initial, regionally specific strategies were developed to suggest appropriate “next steps” in strengthening the connection between Montana hospitals and the local food system. The intent of this study was twofold. While results of this study were not intended to provide generalizations, it did aim to contribute to the methodology and processes of conducting similar studies. The second intent of this study was to provide a framework for change that’s locally relevant and applicable to hospitals in Montana. This study thereby aimed to provide a platform for discussion and action in increasing the use of locally-sourced foods in hospitals food service programs.

Research Setting:

Missoula, Montana has two main hospitals in the city, Community Medical Center and St. Patrick Hospital. St. Patrick Hospital, established in 1873, currently has 253 licensed beds and admitted nearly 8,000 patients in 2011 (St. Patrick Hospital, 2013). The hospital represents the only health care facility in Montana that has signed the Healthy Food in Health Care Pledge. St. Patrick’s sustainability efforts have manifested as the Green 4 Good campaign, a culmination of guiding principles supporting environmental stewardship. Efforts of the Green 4 Good campaign include reducing landfill waste, reducing greenhouse gas emissions, improving energy efficiency, and supporting

ecologically sound food systems (St. Patrick Hospital, 2013). Community Medical Center, established in 1922, currently has 146 acute care beds. With a strong commitment to pediatric care, Community Medical Center is the only hospital in Missoula County that provides obstetrical and newborn care. Additionally, the hospital provides the most comprehensive rehabilitation programs in the state (Community Medical Center, 2011). The facility advocates a connection between the nutrition that is consumed and a person's overall health and well-being. A commitment and understanding of this relationship is put into action through the hospital's Big Sky Café. This dining service sources local dairy products, breads, beef and seasonal produce for its food service program. Menu options have also been modified to reflect seasonal availability of food products and a dedication to healthy, appealing meals (Community Medical Center, 2011).

Montana contains a wide variety of food growers and producers, many of which are located in the Missoula region. Foods include produce, dairy, meats, flowers, and other artisanal products. Local food growers and producers have options in potential access to market outlets in order to reach consumers. These options are demonstrated in the city of Missoula in which a growing commitment to local foods and agriculture is reflected through the numerous regular and organized farmers' markets. Community gardens, food co-ops, and CSA's are also readily accessible in Missoula. Additional markets are beginning to develop and become more strongly established as key components of Missoula's local food system. One example includes the farm-to-cafeteria initiatives, also representing a core component of the town's greater farm-to-institution movement. In 2003, the University of Montana served as the gateway to these farm-to-cafeteria initiatives by

implementing a farm-to-college program that increased use of local food products and ingredients in its food program (Farm to Cafeteria Network, 2013).

Research Procedures:

Study Design:

This study was conducted using a qualitative research design. Three main purposes of qualitative data collection have been described to include exploration, explanation, and description (Marshall and Rossman, 1999). Additionally, qualitative studies can “build rich descriptions of complex circumstances that are unexplored in the literature” (Marshall and Rossman, 1999). This particular study explored barriers and enhancers of incorporating local food into hospital food service programs. Due to the nature of the research questions and intentions, a qualitative approach was therefore an appropriate research method to incorporate into this study. This approach was applied through semi-structured interviews with the involved participants to create an understanding of the particular attitudes and perceptions of Missoula’s health care providers and local producers on local foods in hospital food services. The qualitative research design was also applied through the use of a brief demographic survey preceding each interview session.

Protection of Human Subjects:

The research project in its entirety was reviewed and approved by the University of Montana Institutional Review Board. All participants remained anonymous in the integration of data and composition of the final report. All information collected throughout this study was kept completely confidential.

Data Collection:

Interview Participants:

Interviews were conducted with various staff members at Community Medical Center and St. Patrick Hospital and local food producers and distributors. Hospital staff participants were connected to management of the facility's food service program or sustainability efforts and included positions such as manager of food services, chefs, dietitians, and sustainability coordinators. Gatekeepers were identified at both hospitals. Once relationships with gatekeepers were established, additional participant recruitment took place through convenience and snowball sampling in which referrals were made by the initial contact list. Local food producers and distributors included in the study were identified by working with a local community food and agriculture policy organization that has strong ties to these individuals. Potential interviewees were contacted, given an overview of the study, and invited to participate in the study. Additional interviewees were then recruited through convenience sampling and the process of snowball sampling.

Interview Setting:

Interviews took place in a location selected by the particular interviewee based on particular preference and convenience. Interviews with hospital staff took place on site while interviews with producers and distributors occurred at the site of business or at a predetermined place of convenience.

Demographic Survey:

A brief demographic survey was administered to each participant preceding the interview session. Questions revolved around level of education, current employment and initial perceptions around local food (refer to Appendix A).

Interview Guide:

The interview guides were developed based on themes identified in the literature pertaining to established barriers and enhancers to incorporating local foods into institutional food services. Being that limited data exists on the barriers and enhancers specifically experienced by hospitals, themes from more comprehensive analysis on initiatives such as farm-to-school programs were integrated into question development. Two interview guides were developed in order to more appropriately pertain to participants in either the hospital or food production setting (refer to Appendices B and C). These guides addressed (1) perceptions on current barriers and enhancers to using locally sourced ingredients in hospital food services, (2) individual, institutional, and policy-related factors contributing to these current barriers and enhancers, and (3) knowledge, skills, and resources perceived to be needed by hospitals and producers to use more locally sourced ingredients in food service meals. Each interview guide went through a test run process with two volunteers (one volunteer from a hospital and one volunteer from a local food production company). This step helped to fine-tune the interview guide for conducting the actual interviews, thereby improving the quality of data collected from each interview.

Interviewer:

The interviewer was a female graduate student in the Community Health Program of the Health and Human Performance Department at the University of Montana. She was responsible for acknowledging any potential biases, conducting the interviews, analyzing data, and composing the findings.

Informed Consent:

The interviewer began the interview process at the scheduled meeting time and location. The participant was given the opportunity to ask questions or raise any concerns. Once procedures of the interview were discussed, the participant was asked to give consent in reference to an IRB-approved verbal consent form. The participant received a copy of the form for any personal reference. (The two involved hospitals deferred to the University of Montana's approved IRB application.) The demographic survey was administered after consent was given. The interview then began with a brief description of the informal, mildly-structured style of the interview.

Interviews:

Each interview was directed through the use of the semi-structured questions assembled in the appropriate interview guide. Six to ten interviews were conducted at each of the hospitals and six to ten interviews were held with local producers and distributors, or until saturation occurred. Each of the interviews was conducted in person and was audio recorded to support more active listening and engagement by the interviewer. Participants completed one interview session, lasting approximately 30-60 minutes.

Data Analysis:

Results from the demographic surveys were summarized using SPSS analysis in order to generate general descriptive statistics and analysis of the involved participants in the study. For example, upon compilation of the survey data, SPSS allows for generation of percentage distributions, means, medians and standard deviation (Glewwe and Levin, 2005). Distribution of the population was grouped by age, gender and ethnicity to more clearly understand the composition of the interview participants.

Audio recordings were transcribed following the completion of each interview. Based on a five step process, as described by Ulin, Robinson, and Tolley (2005), data was interpreted, responses were related back to the study's research questions and broader conclusions were drawn around the data. Therefore, this qualitative data analysis approach was inductive in approach, moving from specific data to more general data so that larger, more general statements could be made. The first step of data analysis was full immersion in the obtained data. The primary researcher (PR) read and re-read transcripts to become as familiar as possible with the data. Becoming familiar with transcripts as they were collected allowed the PR to assess the content and determine whether the information being collected matched the intent of the study (Ulin, et al., 2005). By reviewing the data on an ongoing basis, the PR was able to assess the effectiveness of the interview questions and make any necessary adjustments to ensure questions were framed correctly and probe questions were as appropriate and valuable as possible. Ongoing review also allowed the PR to evaluate the quality of the data being collected and to begin formulating initial thoughts on any emerging themes, relationships or other patterns.

The second step of the process was coding of the transcripts to formally identify emerging themes. Coding significant themes and grouping them together allowed the reader to discover new subthemes within the larger context and conduct a more in-depth exploration of each key theme (Ulin et al., 2005). Coding scheme development is a dynamic process that evolves as more interviews are conducted and more data is collected. Therefore, the coding scheme transformed as themes that initially seemed relevant turned out to rarely emerge in later transcriptions. Excel was used to conduct a coding sort in which similarly coded blocks of text will be grouped together. This allowed the PR to

determine the frequency with which codes appeared in the data set as a whole. At this point, another researcher with expertise in qualitative methods applied the coding scheme to 30 randomly selected transcript quotes to determine the reliability of the initial coding scheme. Overall agreement between raters (readers) was determined. If less than 80% agreement was reached, the raters discussed discrepancies until agreement greater than 81%, or Cohen's kappa equal to .820, was reached. Reaching a Cohen's kappa equal to or greater than .820 indicated that overall agreement was higher than expected to occur by chance (Landis and Koch, 1977).

The third step was displaying the data. This step involved looking more closely at the sub-themes of each coding sort and determining whether they originated from particular subgroups (Ulin et al., 2005). Exploring the context of the subthemes allowed the PR to begin developing hypotheses, formulate questions, and validate emerging conclusions about the data. The fourth step was data reduction in which the most significant concepts and relationships were identified. This process allowed the PR to step back from the more defined scope of sub-theme analysis in step three to look at the broader picture and identify central and secondary themes (Ulin et al., 2005). Finally, the fifth step in the data analysis process was interpretation. This last step synthesized the data to explain the core meanings, themes, and relationships that ultimately emerged from the process. Significant themes were identified and summarized. From these themes, connections, relationships and broader significance of the data was explored and discussed in significant detail in order to maintain relevance of the project (Ulin et al., 2005).

Theoretical Foundations:

Theoretical models can be beneficial in providing a comprehensive framework for the design and development of a project. Such models provide structure to the processes of a particular project, from needs assessment, to data analysis, and finally to strategy development. Such models appropriately apply to this particular qualitative study in which the goal is to integrate the results into a working programmatic framework with suggested “next steps.”

The Socio-Ecological Model

Theoretical models provide a framework in community and public health projects and interventions. The socio-ecological model of health behavior explores health behavior from a multidimensional perspective in which factors from a variety of levels interact to influence a particular behavior (Elder et al., 2007).

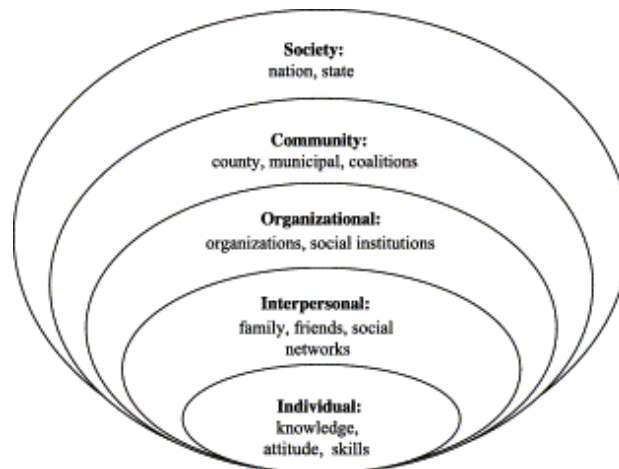


Figure 1 Socio-Ecological Model

Source: Prevention Institute, 2003

This model suggests that factors derived from individual, community, institutional, and political domains all interact to influence a particular health issue or behavior. As a result of dynamic interrelationships among all of these different levels, programs that address

these various levels are more likely to be effective. The Institute of Medicine (2003) defines the socio-ecological model as “a model of health that emphasizes the linkages and relationships among multiple factors (or determinants) affecting health.” It’s through the exploration of these interrelated factors that a program or intervention can be developed, as potential areas in need of change or modification can be identified and informed by this holistic assessment of a health behavior. Being a holistic, multidimensional approach to program development, components of this model were integrated to guide the approach and design of this study, including structure of research questions, methods design, and development of the interview guide.

CHAPTER FOUR

Results

The purpose of this study was to assess the current farm-to-institution system in Montana and more specifically, the farm-to-hospital system in Missoula, Montana. This study aimed to provide a situational assessment on the use of local foods in hospital food service programs in Missoula, Montana. Through semi-structured interviews, perceptions and attitudes of staff and administrators at Missoula hospitals were explored for barriers and opportunities to using local foods. Interviews were conducted (N=9) with hospital staff who were involved in food service management. Interviews were then conducted with local producers, distributors and processors (N=8) to explore their perceived barriers and opportunities to working with institutions in Montana. All participants completed a ten item demographic survey. Interviews were analyzed for common themes that provided a basic framework for ways to increase the amounts of locally sourced foods in hospital food service meals.

The results are discussed below, beginning with the survey data, followed by the interviews. Separate interview guides were used for interviews conducted with hospital staff and local producers, as differing perspectives and experiences are associated with each sector. Therefore, while data from the two groups was integrated to research Question three, the Results section will present each set of interview data separately to answer the first and second research questions. Emergent themes from the interviews are presented and accompanied by selected quotes to further demonstrate their significance and context.

Demographic Survey:

Participants filled out a brief demographic study before beginning the interviews. Fifteen participants completed the demographic survey (not all interview participants filled out the survey). Eight surveys were filled out by hospital staff participants and seven were filled out by local food producer and distributor participants. Hospital staff was located in Missoula, Montana while producers were based at various locations throughout western Montana.

Total Participant Group:

The following table displays the gender, age and education distribution of the study participants. As this table shows, the majority of participants were female, 45-54 years old and were split between having some college or an Associate’s degree and having a graduate degree.

Table 1 Description of participants

	Percent
Gender	
Female	66.7
Male	33.3
Age Range	
25-34	20
35-44	26.7
45-54	33.3
55-64	20
Education	
Some college/ Associates degree	26.7
College Degree	40
Graduate Degree	26.7
Doctorate Degree	6.7

Three questions on the demographic survey were presented using a Likert scale to explore perceptions around local food and consumption tendencies. 73.3% (n=11) of participants

felt that local foods are sometimes healthier than non-local foods while the remaining 26.7% (n=5) felt that local foods are always healthier than non-local foods. 86.7% (n=13) of respondents strongly agreed that it's important to incorporate local foods into one's diet while the remaining 13.3% (n=2) agreed that it's important to consume local foods. Reflecting responses to these questions, all (100%) of the study participants identified consuming locally-sourced foods at least once a week. The farmers' market was most predominantly identified as an outlet to purchase locally-sourced foods, as 73.3% of participants noted that they attend a local farmers' market. Grocery stores were also identified as a common outlet to procure local foods, as 60% (n=9) of participants recognized grocery stores as a beneficial market.

Hospital Staff:

The hospital staff participants (n=8) were between the ages of 25 and 54 with 50% (n=4) being 45-54 years old. 87.5% (n=7) of participants were female and 75% (n=6) of the group had either four or more years of college or post graduate education. Additionally, 50% (n=4) of participants have a yearly income of \$40,000-\$60,000 and 37.5% have an income of more than \$60,000. Occupation titles ranged from sustainability coordinator, nurse, dietitian, chef and food service manager.

Three questions on the survey were based on a likert scale to explore perceptions around the use and purchasing of local foods. 75% (n=6) of participants felt that local food is sometimes healthier than non-local foods, while 25% (n=2) felt that local foods are always healthier. Along with this, 87.5% (n=7) of participants strongly agreed that it's important to incorporate local foods into one's diet and 100% of participants noted that they consume locally-sourced foods at least once a week. There were also several outlets

identified that participants use to purchase local foods. 87.5% of participants attend local farmers' markets, 50% are members of a food co-op or CSA and 75% (n=6) purchase local foods from a grocery store. Friends and local vendors were also identified as sources to obtain local food products.

Local Producers and Distributors:

The local producer and distributor participants (n=7) were between the ages of 25 and 64 with 42.9% (n=3) being 55-64 years old. 57.1% (n=4) of participants were male and 42.9% (n=3) of participants had a graduate degree. 42.9% (n=3) of participants had an annual income of \$20,000-\$40,000 and another 42.9% of participants had an income of \$60,000 and above. Occupation titles ranged from farmer, manager and agriculture coordinator.

All participants answered the Likert scale questions around purchasing and consumption of local foods. 71.4% (n=5) of participants felt that local foods are sometimes healthier than non-local foods while 28.6% (n=2) felt that local foods are always healthier. 85.7% (n=6) of participants strongly agreed that it's important to incorporate local foods into one's diet, while 14.3% of participants agreed that it's important. Similar to the hospital staff participants, all (100%) of the local food producer and distributor participants reported they consume locally-sourced foods at least once a week. Several different outlets for purchasing local foods were identified by this group. Fifty seven percent (n=4) of participants purchase local foods from farmers' markets while approximately 57% identified food co-ops as a source for local foods. Twenty eight percent (n=2) of participants are members of a CSA program and 57.1% of participants procure

local foods from grocery stores. Along with these sources, local ranchers and participants' own farms were identified as other sources for purchasing local foods.

Hospital Staff Interviews:

A variety of themes related to the use of local foods in hospital food service meals emerged from the interviews and are summarized in Table 2. The themes naturally fell within four primary themes and significant sub-themes emerged from each of these groups.

Additionally, sub-theme elements were also identified and included when appropriate. The primary themes included: 1) Local food knowledge; 2) Hospital infrastructure; 3) Local food in health care; and 4) Local food use and producers. Sub-themes and sub-theme elements are presented and accompanied by relevant quotes below.

Table 2 Themes and sub-themes of interviews with hospital staff

Emergent Theme	Sub-Theme(s)	Sub-Theme Elements	Element Sub-Theme(s)
1. Local food knowledge	Personal knowledge/perceptions	Hospitals have hurdles to using local	
		Growing disconnect between people and food/ less farming	
		Need increased education, awareness and communication	
	Perceived benefits of local food	Local economy	
		Environmental health	
		Human health	
		Political: Vote with your dollar	
Community health/supports community			
2. Hospital infrastructure	Enablers	Staff	Passionate staff, supportive administration
		Food Service management, financial infrastructure	Dedicated, creative chefs: Effective kitchen and cost management
		Long enduring sustainability emphasis on site	Thomas Cuisine Food Management
		Flexibility of contract account	
	Barriers	Restrictions of contract account	
		Lack of resources	
		Restricted patient diets, lack of communication with patients about "local"	

		Lack of marketing	
	Programs/ Efforts	Local initiatives in the kitchen/use of local products	Removal of unhealthy foods and beverages
		Education	Food labeling and explanations Outreach events/hospital wide initiatives/ programs
		Staff programs	CSA program Preventative health care
		Positive feedback	
3. Local food in health care		Enablers	Natural setting for health education
	Barriers	Western health model is unsustainable, doesn't emphasize nutrition	
4. Local food use and producers	Enablers of using local foods in the hospital setting	Benefits of working with local producers	More personal relationships, direct communication
			Coop situation: WMGC
			Flexibility, adaptability, organized
			Delivery to the hospital
			Good work ethic/pride in work
		Quality	
		Missoula is a uniquely supportive community of local food	
		Growing popularity for local	In health care setting In community setting
	Networking: Meetings, conferences, partnerships with other health care facilities		
	Perceived barriers to using local foods in the hospital setting	Time needed to work with multiple producers	
		Quantity/ availability	
		Cost	
		Seasonality	
Demand		Tastes different: Uncertain of change and comfortable with established eating habits Lack of interest in eating local	
Lack of knowledge/ awareness of local foods and resources			

THEME 1. Local Food Knowledge:

The local food movement is gaining momentum across the nation. Attitudes and beliefs around local foods are dynamic and evolving rapidly as the movement gains support. The interview data showed perceptions around using local foods were a dominant theme. This theme related to use of local foods at a personal and at a larger institutional level. Such

perceptions offer insight into the ways in which the hospital staff personally relate to local food and the farm-to-institution movement. Prominent sub-themes within this theme include (a) personal knowledge and perceptions and (b) perceived benefits of local food. Within these sub-themes, notable sub-theme elements emerged as well.

Sub-theme. Personal knowledge/perceptions: While support for local food is growing, there is still a significant disconnect between communities and their food system. Such disconnect creates a challenging environment for strengthening the local food system.

Sub-theme element. Hospitals have hurdles to using local: Based on the particular job title of the interviewee, some participants were more closely involved in working with local producers than others and therefore more aware of the associated challenges and opportunities. However, there was a general and more overarching perception that the hospital, as an institution, faces a variety of challenges to using locally-sourced ingredients into the meal services program.

- *“As far as bringing local foods into hospitals, I absolutely agree. I like to see that. I realize that it’s difficult, because of the rules, probably. There are probably plenty of health rules that keep us from using them. Demand, quantity, availability. There are a lot of factors that go into it.”*
- *“Cost is probably an issue. It’s not cheap. Cost isn’t a significant issue for me personally because I have a good job but for the individuals, sure. It would be an issue. I know the food bank grows some of their own food and I hear people talk about how good it is. They wouldn’t be able to afford to buy it. So I think affordability might be another issue. Because I have a budget. For the hospital, I’m sure you can get it cheaper if you’re having it shipped from somewhere else, or in a can. But for me individually, it is worth it to pay extra, but it is extra.”*
- *“I’m not familiar with the safety rules and health regulations. I’m sure health regulations stand in the way and for some obvious reasons”*

Sub-theme element. Growing disconnect between people and food: Although local farming and food systems are gaining in popularity, a concern was expressed that

sustainable food systems face great competition against the more global, dominant food system of large-scale production and distribution. Participants discussed the effects such a global system can have on communities and nutrition and particularly described the growing disconnect that communities are having with their food supply and agricultural landscape.

- *“You know it’s amazing that it’s just been a few generations ago that everyone knew where food came from and how it was grown. And some of that knowledge is already gone. Sometimes people think food really is as it is at the grocery store and don’t recognize where it came from before that, from the ground and from the animals.”*
- *“I think sustainability is a big issue. I think at one point they’re going to want to give us a pill. We’re not going to be able to feel, taste, touch, smell the beautiful food that we are given now”*
- *“Where it’s going? I would say in Missoula, that’s the real challenge right now. It’s a current topic of discussion because we’re losing a lot of opportunities for local food. Lots of housing going up and – I don’t know what that balance is. That huge thing of apartments they put up on Russell? That could have been a local farm.”*

Sub-theme element. Need increased education, awareness, and

communication: The local food system movement in Montana is young and therefore has ample room for growth and development. Support for buying local continues to increase and can be viewed as a reflection of a more general dissatisfaction with the country’s approach to health. A sub-theme emerged from the data pertaining to needing more education and communication pathways to further engage communities in supporting farm-to-table efforts. Such efforts correlate with a potential shift in our health paradigm to emphasize local, healthful nutrition and prevention-based health care.

- *“We’re trying to keep our own population, which is our employees, well. But before long it will be all people who use this facility, this system, and we will be paid based on avoiding illness. So that’s a radical change and it’s such a needed change. And I think with that comes more opportunity and potential for preventative health, which nutrition is just such a fundamental key of.”*

- *“We have conversations, we demand local foods, we educate, we do cooking classes, we do cooking demonstrations, we do handouts, we get little soldiers out there to just talk about it all the time, you know? I think that’s the biggest way to get change because then when people are personally invested, they’re willing to be like, “hey, I just saw that video on your Facebook and it made me really think about whether I’m going to buy that meat that’s less expensive.”*
- *“But I suppose it all has to improve with time. It sounds like the University has the hydroponics going on with the micro greens and everything, I heard. It’s impressive. That’s why it would be interesting to talk to that woman in Livingston, even for us to find out what she’s doing and what changes we could make.”*

Sub-theme. Perceived benefits of local food: Along with general perceptions and knowledge of using local foods, a considerable degree of understanding around the benefits of supporting local producers and foods was identified. Benefits were recognized across the socio-ecological levels of a community, such as the individual, community, environmental and economic levels. This distribution of benefits demonstrates a holistic perception of local foods and the role that they are currently playing, or may play in the future, for the country’s health and food culture.

Sub-theme element. Local economy: Many participants identified the potential economic benefits of purchasing and consuming local foods. Through purchasing local foods and products, local farmers are supported and agricultural businesses are strengthened. Although still at the micro economic level, purchasing foods from local producers helps keep money in the community and thereby supports local businesses, employees, and community members. Such branching effects of purchasing local foods were identified as a great benefit. Along with helping to keep money in the community, a sense of pride in supporting local business people was also discussed by various participants.

- *“I’m for it because I’m for the local economy. Not only because of that, but one of the things, you know I think that it helps the economy, it helps us. It’s grown here, it’s produced here and helps pay for the people that live here.”*
- *“It turns out that in some cases, local food is probably better from a sustainability standpoint – whether it’s organic or not. It supports, hopefully, your local economy, it keeps some of that money in the state”*
- *“I think that it’s a trend that been taking place for a while and I think that it’s really important, obviously, you know, in a broader perspective, our money is shipped to other countries, that’s a bad thing, so I think we take it as we need to be more sustainable in our own regions. Because obviously if not, jobs get shipped elsewhere.”*
- *“and it’s the key to solving a lot of the economic problems that go along with our current practice of health care which is treat diseases.”*

Sub-theme element. Environmental health: Environmental impacts of purchasing local foods were identified as another component of the local food benefits. Such benefits pertained to reducing the negative impacts of a larger, global food system. For example, purchasing local foods decreases transportation distances which reduce emissions and other resources spent as a result of global food production and distribution. Along with decreased transportation time, local food systems are often more sustainable compared to monocrop agriculture. Purchasing local food supports local agriculture. Support and appreciation of local agricultural landscapes can thereby support the preservation of these spaces and reduce development or industrialization.

- *“I think it can really help enhance and strengthen our economy, to enhance our relationship with the natural world – which I think is important not only for the planet but for our own health and mental health.”*
- *“I think that local farmers, to a certain degree, practice biodiversity and I don’t know a lot about it, but I know that – what I’ve learned about it seems a sustainable practice. We’re talking, you know, after you and I are off the face of the Earth. How are we going to sustain our land and our food supply? And biodiversity seems like a winner but it’s a lot of work.”*
- *“So when I think about eating local foods the things that are important to me are, number one that I’m getting food that’s produced within my region because it’s traveling less time to get to me.”*

Sub-theme element. Human health: Participants offered a wide variety of comments regarding the positive health effects of consuming local foods. Local foods were often perceived as being of higher quality compared to foods produced through the global food system and therefore more conducive of good health. Local foods were often considered higher quality as foods that travel farther distances were presumed to contain greater amounts of preservatives. Local foods were thought to be more fresh and natural and better support health and growth. Fresh, local food was also associated with consuming a more seasonally-based diet and was further considered more ideal for the human body. An increasing number of people are supporting the need for a more prevention-based health care model in this country. Nutrition and quality food is often associated with preventative health care and considered a core component of this model of health. The role of nutritious, quality diet was identified by participants as a significant health benefit of consuming local foods.

- *“And high quality, to me, connotes local because there’s less loss, less nutrient loss.”*
- *“I think it’s good for our health. I think, I prefer when it’s organically grown, locally”*
- *“Well I can say personally that I have a firm belief in preventative health care and that nutrition is the key to prevention”*
- *“To me it means that they are just foods that are available in your community that have been grown and produced in your community that are readily available that may be more nutritious because they’re not transported and all the delays that may come in to play, especially in Montana.”*
- *“As well as, everyone gets more health benefits, especially with allergies and things. Local honey, we all know that’s something that’s big. Apart from that, that’s really what it’s about for me and if I can purchase local then awesome.”*

Sub-theme element. Political: Benefits reaching into a broader, political level were also identified as outcomes of purchasing local food and products. The global food system based on mass-scale production and distribution has resulted in monopolizing

agricultural corporations and the subsidizing of commodity crops. Participants identified the significant impacts that consciously choosing to purchase and support local food can have on this corporatized food system. Purchasing any item is in effect voting with your dollar. Conscientiously supporting local producers serves as an individual's voice in agreeing or disagreeing with a particular business and even with a larger, overarching system. Policy, such as future agricultural regulations or Farm Bills may also be influenced through this purchasing power.

- *"I mean, I'm just like, it's not just the food. You know, you vote with your dollars in every way."*
- *"But you know that bag of potato chips that gets subsidized. It's so political and it so easily becomes so overwhelming."*
- *"Yeah, I would pay five dollars for a local potato chip if I didn't have to give any money to Monsanto."*
- *"It's about customer awareness and the more aware they are the more appreciative they are and they're going to continue to vote with that dollar. I mean that's really it, they vote with their dollar. That helps us and I think that starts with awareness."*

Sub-theme element. Community health and support: Relating to economic support and health of a community, participants expressed community pride when they purchased local foods.

- *"I just think that it's a great movement. I think that it's necessary to keep communities thriving because small businesses are going to close – it's just the way of the world. The bigger guys come in and they can do it cheaper and better and faster and so to avoid that from happening, we have to support our local folks."*
- *"So I think that as far as being chef, it's something that's really important no matter what institution you're in outside of probably fast food. So, I mean that's kind of how my thought is, wherever you go, you should support the people that are actually supporting you. Whether that's farmers or even people here, I mean they're bringing their money in, it's nice just to keep that centralized and stuff instead of shipping it elsewhere. It keeps – I know in the past that we paid more for local or for regional type things but it ends up benefiting in the long run."*

- *“Well personally I think of, you want to support your local environment, so that’s important and whether or not Thomas Cuisine is on board with that or not, it’s important to me as an individual just because I want to support locally, whatever I do.”*

THEME 2. Hospital Infrastructure:

As the farm-to-institution movement continues to grow, both barriers and enablers are being identified within each institution and its particular infrastructure. While the two Missoula hospitals differ in their financial profile and kitchen management styles, commonalities and larger themes of opportunities and challenges clearly arose. Core sub-themes that emerged within the larger theme of hospital infrastructure included (a) enablers; (b) barriers; and (c) hospital programs and efforts.

Sub-theme. Enablers: Hospital staff identified various characteristics of their institution’s infrastructure that facilitated efforts to join the farm-to-institution movement and incorporate more locally-sourced ingredients in the food service programs. Staff support, kitchen management and group purchasing organization (GPO) contracts were recognized as significant enablers of local food initiatives on site at the hospitals.

Sub-theme element. Staff: The importance of the attitudes and energy of staff involved in the local food initiatives and efforts at the hospital was strongly acknowledged and discussed throughout the interview process. The process of locating and utilizing more local foods was closely associated with, and a reflection of, the individuals involved.

Passionate staff: As a new movement, enthusiastic and knowledgeable proponents of local food help drive awareness and support among other people. Such momentum is necessary to successfully engage in change at the larger institutional level. Beacon leaders among hospital staff were identified as significantly contributing to the successes so far

achieved in the food service programs and were considered responsible for initiating such level of change.

- *“Because several places have someone like myself who’s going to wave the flag and all. And so does Olympia and so does Spokane and a number of places do.”*
- *“we have a Food Smarts Committee here with people from the kitchen, nutrition services and dietary and from all different areas involved in changing what we serve our patients and our staff and our community because we do value the idea that food can be thy medicine. That’s a priority for a lot of people here that are interested and motivated to making that change.”*
- *“If we prepare a lot thinking it’s going to be fantastic and it doesn’t turn out that way that that’s unfortunate but I think just because of our commitment and our mission to do what we’ve set out to do that part of the process, it’s going to happen.”*

Dedicated, creative chefs, effective kitchen and cost management: Dedicated and enthusiastic chefs and kitchen management were identified as key drivers to strengthening local food initiatives. Chefs and kitchen staff are most directly involved in food preparation. These individuals inherently coordinate and manage use of local foods. As a result of commitment and enthusiasm among kitchen management, local foods are used in more cost effective and creative ways. Such traits were identified as essential to successfully achieving change within the food service programs and seen as an asset to each hospital’s infrastructure. Additionally, administrative support for local food initiatives was also recognized as a beneficial component to using more local ingredients in hospital meals.

- *“Cost is not as big a factor as what I thought it would be. And we’re, you know, you have to be smart about it. I mean, if we’re going to do roasted celery root with bruschetta or whatever, which is absolutely delicious, then we might pair it up with the frozen corn or just, to balance”*
- *“So you really have to be, you have to want to do it, or the Chef. You have to know, you’re going to put in some extra effort in terms of thinking outside the box, being creative, figuring out, “ok, how can I incorporate this and how can I tell the story?” Because if you don’t tell the story, who cares?”*

- *“So whenever we have hospital events, the hospital is incredible about supporting the local businesses too. Maybe not so much with the intention of what food is actually being brought in, they look at more, “we want to support the Big Dipper because they’re local.” And so those are just examples, I know we’re talking about foods but we use as many local services as we can in general.”*
- *“But we were fortunate enough, at least with our last chef, it takes an open mind. It takes an open mind and a can-do attitude and then, obviously, you have to get people excited about it.”*

Sub-theme element. Food service management, financial infrastructure:

Hospital food service management structure varies has different effects on efforts for using local foods in meal services. Financial infrastructure also plays a significant role in the ability to use local. For example, whether a hospital is non-profit or for-profit impacts customer prices and therefore produces different levels of space for creativity in meal preparation. The particular financial structure also impacts the level of flexibility to engage in the economic model of spending money to make money. The system of food service management emerged as a prevalent theme in enabling the use of local foods. For instance, cohesiveness in the process of creating menus and ordering the necessary ingredients was found to be an important factor. Rather than disconnecting these processes and allocating responsibilities to various staff members, chefs managing the entire spectrum allowed for greater control, cost effective purchasing, and creative, appealing meals. Such flexibility and cohesive planning was also associated with lower food costs for the hospital.

- *“And I think for the prices here, I mean you’re paying six dollars, there’s no risk, there’s not a lot of risk to try something new and that helps as well. And we’re not trying to make a lot of profit and so that helps us as well purchase higher priced things.”*
- *“One thing I would also like to add is that, you know that fact that the chef is putting together the menu as well as we are purchasing and ordering food. Sometimes in different accounts, they might have a position set up so where maybe the café supervisor, somebody else is looking at the menus, they’re looking at the numbers and seeing some things and then they’re like, “this is the menu.” And then a store room clerk is then ordering the food. We control both sides of those things so we can really*

make sure that if we put together a nice menu, but then if you don't order the correct product that can create, obviously, you know, some issues there. So that we control both I think that's a huge thing. And obviously it results in a happier customer and a better end product."

- *"Also, we've maintained a lower food cost actually so that way maybe we can make those purchases on equipment or we can try some exotic things. We brought in, not necessarily regional, but a blue tofu. You know, it wasn't blue, but we have more flexibility and leeway to buy some things that might cost more but once we do and we can show purchases on those, then obviously the buyers, the distributors are more apt to give us a lower price moving forward."*

Thomas Cuisine: Thomas Cuisine is a contracted working partner in the food management of both hospitals. Participants viewed this company as having a strong mission and values for supporting local communities and local food producers. Such inherent values within the broader, managing company were described as an enabler to finding creative ways to incorporate more local foods within meals. Such support at the management level builds on the enthusiasm of individual staff members and more greatly facilitates change.

- *"I was here eight months before Thomas Cuisine took over and so it really started happening then and it has just grown. Every year you take another step to add something or try to do something better."*
- *"I appreciate that and again also, it's engrained in Thomas Cuisine's values and mission is you know, great food and genuine service and enduring relationships. And that's big. I'll be able to pass this on to whoever's, in five or 10 years and maybe we're not here but hopefully the relationship will last."*
- *"It makes it so much easier when the company you work with [Thomas Cuisine], for, has the same values as yourself. It makes it so much easier. I don't think it's like that everywhere else."*

Flexibility of the contract account: GPO contracts make the hospital food and supply ordering process streamlined and convenient. In exchange for this convenience and discounted prices, contracts require varying levels of commitment relating to the amounts of products ordered within the GPO compared to outside of the company. The flexibility of

these contracts was seen as supporting the use of externally purchased local products.

While the contract provides discounts and rebates for the hospital, contract flexibility creates opportunities to use locally-sourced ingredients to meet the remaining hospital food needs.

- *“I think, it has to be monitored generally. We’ll be able to see obviously through our purchases, through our accounting team as far as making sure that we’re in compliance with those numbers. But you know, if it’s set at, like a lot of times programs are at a 90/10, 90% from your primary vendor and then for your specialty and secondary vendors it’s like 10%. There’s more flexibility in this account where, I don’t know if it fluctuates at all but I think it’s like between 80 and 85. So if we got 20% leeway, actually that’s really good because you know, the produce and things like that, we buy a lot of the same stuff, like with the patient services.”*
- *“Yeah that eats up a lot of it actually. It allows us to have a lot of freedom. So as much as there’s constraints, there’s plenty of opportunity to continue pushing the envelope a little bit. It’s considered one of the best accounts within Thomas Cuisine. So I don’t think that it limits us too much. Obviously we need to be cognoscente to make sure that there are specific items that we need to make sure to order but as far as most of the produce and protein, we do have a lot of free range.”*

Sub-theme element. Long enduring emphasis of sustainability on site:

Participants discussed the challenging dynamics and hurdles associated with shifting the institution towards locally-sourced foods. It can be a costly and challenging process to move away from unsustainable systems of food preparation. Hospital staff participants described this common scenario and the ways in which deeply rooted values in sustainability and local support have changed the food service management in their facility.

- *“Because you know some hospitals have gone so far as to have fast food chains in their cafeterias, you know it’s just incredible. And so, luckily we’re never in that position but some hospitals have had a really long way to go.”*
- *“It’s been a big hurdle and it’s surprising how difficult that is. We were fortunate because we use reusable dishes, we always have, we never went through disposable dishes. We have some for takeout and we have moved away from Styrofoam but I always say that it saves you money to use reusables, if you can afford to buy them in the first place.”*

- *“It’s just normal. It’s not something that’s different. We’re used to having multiple ones [deliveries] here instead of the just one day a week, getting a big huge delivery and then just storing it away.”*

Sub-theme. Barriers: Several factors were identified as impeding efforts to use more local foods in the hospital food service programs. Using more local foods has required changes in food procurement and preparation methods. Making such changes for an institution can be challenging. These factors were associated with management, resources, and patient care at both institutions.

Sub-theme element. Restrictions of the contract account: The two hospitals that participated in this study have different GPO contracts that vary in purchasing minimums, general requirements and associated incentives. While contracted with the same company, the contract differences were viewed as either a significant enabler or barrier to increasing the amount of local foods purchased by the hospital. Contracts require a particular minimum proportion of food products be purchased through the GPO. This requirement was identified as greatly inhibiting flexibility and opportunity to turn outside of the contract to purchase local ingredients. While staff members were enthusiastic and supportive of using local, failure to comply with the contract forfeits potential rebates, therefore resulting in a challenging dilemma when considering the use of local food in food service meals.

- *“So the novation contract, the group purchasing organization, we purchase the food through U.S. Foods, but any rebates that come back, go to the hospital. So that’s part of the deal. We save the hospital money by purchasing these things that fall under the GPO’s. And I just met with a gentleman last week and, so that’s another, that’s a completely different challenge in terms of, ok, well we didn’t meet our target. My incentive is like, I got docked, as did we all, for not meeting our goal on the novation side because we’re trying to do all this stuff over here.”*
- *“That’s really what I want to do, is continue to do what we’re doing and maybe even push that forward more. But also meet the target. It’s not easy. It’s not easy and it’s a*

really big monster for a chef to number one try to wrap your head around the whole GPO, if you've never dealt with them. And then to really balance it. And to be honest, I've told my boss this, if there is anything that I was going to sacrifice, that would be it. I know that I'm not doing the right thing by not getting the rebates for the hospital, but at the same time, I'm doing the right thing. And that's a – Food Smarts committee doesn't even understand."

Sub-theme element. Lack of resources: Time, staff, and skills: An institution's food management approach to food preparation and menu planning often needs to change to incorporate local foods. A lack of adequate resources to accommodate these changes was identified as a barrier to strengthening local food initiatives in the hospital. Participants addressed the additional processing and preparation time often needed to use local products. This additional preparation requires more time, staff, and money and can therefore pose as a challenge and restrict local food purchases. Storage space was perceived as a barrier as well. Purchasing local food connotes fresh, whole foods that need to be adequately stored. Additional storage space for local foods is not readily available. For example, hospitals were limited in their ability to hold multiple days worth of local salad fixings, in which more than 1,500 meals a day are served. Financial support was also identified as restrictive on local initiatives as facility budgets were described as very limited.

- *"They're taking squash and processing it to the point where it's diced, it's frozen, we can buy it from the Grower's Coop and so there's not all that prep. You know. I mean that's the hardest part about eating healthy is just the washing, the chopping of the vegetables, right? So you've got this processing plant that's processing food in season and then, you know, yeah it's frozen vegetables, but it's local and sometimes it fits within some of our applications"*
- *"So what we've tried to do, and I know it's been such a challenge, because every time you think you're going to get on top of your mountain of paper work, something happens. Someone calls in sick, you have to go out and work the station yourself."*
- *"I guess if there were any other challenges, it's the additional labor it takes to prep that stuff which is why I really want to do a field trip. I understand that the processor*

is looking to expand. I think they may have applied to a grant, they need another facility. I mean, that's way down the road but they will be able to produce more and do more variety of what it is they're doing. But yeah, I think that would be probably the next step to ease some of the burden on our cook's team and still provide our customers with perhaps more local than we did last year."

Sub-theme element. Restricted patient diets, lack of communication with patients about "local": The health care setting is naturally a site of health and re-growth. Acute care facilities treat severe health issues. Patients are often prescribed very specific and restrictive diets. Patient dietary needs emerged as a barrier to not only using local food in patient meals, but also for educating patients about the importance of using local food. Participants described the non-conducive nature of acute care due to the restrictive nature of the diets and an inability to substitute parts of these diets with local ingredients.

- *"We're an acute hospital. People here are really sick. So if you're coming into the diabetes clinic you're going to get a different experience than if you're out because you had a stroke because you have high cholesterol. Like, is this really the best time for me to be like, we go over it. I might educate that to you but I certainly, personally can speak to interactions I have with patients where I bring it like, "I'm watching you order lunch, you had bacon, sausage, whatever, let's talk a little bit about this." But in this setting it's very tough. It really isn't conducive because people are so stressed out about being in the hospital, like, really this is not what I want to hear."*
- *"One factor is always with the modified diets, some soft or mechanical soft diets, of course no fresh fruits or vegetables. You kind of just have to go along with those requirements of each diet."*
- *"And patient meals are specific and sometimes they have no fiber and sometimes no salt – there is quite a range of therapeutic diets."*

Sub-theme element. Lack of marketing: Another component that emerged in the hospital staff interviews as a barrier was a perceived lack of marketing and awareness for local, on-site food initiatives. Participants identified greater outreach as a component of the local food efforts that could be strengthened in order to gain additional support.

Increased communication and awareness around the programs and foods being used were perceived as factors that could use further development.

- *You know, and as far as influencing others to finding the importance of it. We don't have the time or the marketing efforts to actually give them all the benefits and educate our customers who are neutral on why this is so awesome. We could probably do a better job with that.*
- *Yeah because I bet if you asked, you know, ten customers if they know that our beef today was locally sourced, I bet they would not know that. And we might as well, that's a wonderful thing, we might as well put it out there.*
- *It's hard for me to say but I think that, you know, we could always do a better job of marketing. Our local purchases. And it's tough because we already have signage out there, you try not to bombard them too much.*

Sub-theme. Hospital programs: Participants identified a variety of programs and efforts taking place to increase awareness on the hospitals' efforts in using more local foods. Work both in the kitchen, and with patients and staff, demonstrates the holistic approach the two facilities are taking in order to gain support and capacity in using more locally-sourced ingredients.

Sub-theme element. Local initiatives in the kitchen and use of local products: Participants identified significant efforts taking place within kitchen management to become more creative in identifying and utilizing different outlets to locate local products. These efforts were reflected in the wide variety of local foods that are now being served and incorporated into hospital meals. The use of local, grass fed beef, grains and produce were mentioned multiple times, and products such as Dixon melons, tomatoes and baked goods were noted as excellent, locally-sourced items. Along with discussion around local products being used in food service meals, participants also addressed the creative, palatable ways in which these ingredients are being incorporated into the menus.

- *“But he’s bringing in things like kamut and quinoa and you see different grains, you see yellow and purple carrots. You see different colored beets. You see, he’s bringing in so many colors and different, like really nutritious whole grains and wheat pastas”*
- *“We have an effort that we try to purchase as much produce as we can locally, just depend what’s in season, most of our fresh herbs come from a local producer. As much as we can of our fresh produce. So we particularly get tomatoes from up north, there’s cantaloupes, certain times, there’s Dixon melons that we purchase. The majority of our beef comes from a local ranch down in Dell. You know, any kind of initiative that we have, we buy ice cream, we go Big Dipper, you know.”*
- *“So beef and produce, primarily we also purchase all of our breads from a local bakery and I would say not all of them, but probably 75% of the breads we serve come from a local bakery. And kamut grains come from Great Falls. We buy all of our kamut, it’s up by Benton. So we use those for part of salads and main entrees and things like that.”*

Removal of unhealthy foods and beverages: The Healthy Food in Health Care

Pledge contains several different components that hospitals can work towards to improve their level of sustainability and use of local foods. One core component of the pledge includes a commitment to decreasing the amounts of sugared beverages served in the facility’s food service program. This is one change that was identified by participants as occurring on site in order to shift towards more nutritious, local meals. Another significant change that was identified was efforts to not only decrease the amount of meat being served, but to also transition to providing local, grass fed beef. A third significant change involved the removal of the cafeteria fryer. While the removal of fried items was described to benefit nutritional health, the change was met with significant disapproval by hospital visitors due to the popularity of these particular types of foods.

- *“And so we have signed on for that and a few other of the areas and in the local and sustainable foods section there are three goals. One is healthier beverages because one of the big issues is that people consume so much unhealthy beverages”*
- *“So one of the three is healthier beverages. So we are working on that to decrease the amount of sugary beverages we sell, but we do still sell it. We have shrunk our options down. I think we had four coolers, now we have two coolers.”*

- *“So we’re working to reduce the overall meat that we purchase as a percentage of our total food purchases. I don’t know if we’ve really made much progress in that direction, although we do have something called “Meatless Mondays” and we’re having more good protein options and more explanation about what they are, so that’s helpful.”*
- *“First thing was we wanted to get rid of the fryer, we wanted to incorporate, again, healthier options. So our old Broadway grill went away”*

Sub-theme. Education: In addition to changes within the kitchen and the tangible shift to using more locally-sourced products, the hospitals are also emphasizing an educational component for staff and visitors. Educational outreach is occurring in a variety of ways is helping to increase awareness of both the hospital’s particular efforts as well as the beneficial outcomes of purchasing and consuming local foods.

Food labeling and explanations: Participants described educational efforts to support and guide staff and visitors in choosing nutritious food items. Such efforts included signs and summaries of nutritional content and source of available foods. Color coded signs accompany food items to clearly inform customers of the nutritional value. Organic and local foods are accompanied by an additional flyer describing the particular vendor and health benefits of the item. Participants identified such labeling as conducive to dialogue around supporting local and the generation of greater awareness of the topic.

- *“But if you have something written on the menu saying locally grown or locally sourced or something, somebody will say, “oh, well that’s good, where’s it from?” So it strikes up conversation so they’re interested.”*
- *“And we talk about if we bring out a new item, we’ll talk about the health benefits of that item. We’ll have a little flyer on there that will tell you what you’re getting and things like that. Nutritionals are on there. So they do get excited about that. So we always label things too if it’s locally sourced. You’ll see it on the menu out there. You’ll see that it’s locally sourced.”*
- *“We have labels on them in red, yellow, and green that say – the red say’s “high in sugar, salt or calories.” The yellow says “moderate” and the green says “low in…” and so they are grouped that way to help guide people to make healthier choices.”*

Outreach events/hospital-wide initiatives and programs: Hospital-wide initiatives, committees and events were identified as playing a key role in raising awareness among staff and visitors around the use of local foods and importance of a nutritional diet. The Food Smarts committee was identified as an important and strong proponent for local food, portion control and healthy nutrition. Educational events and outreach such as newsletters, and barbeques and local meals were recognized as another successful outlet in raising awareness as well. Larger, national events such as Nutrition Month, was also described as an ideal opportunity to initiate conversations with hospital staff and visitors about consuming a local, nutritious diet.

- *“It will be a therapeutic garden for the patients, it will be a respite space for staff, it will be a beautification project, it will be an opportunity for the schools, particularly the Catholic schools because they have not been engaged yet with the Garden City Harvest and the public schools have. So it’s an opportunity for the Catholic schools to get involved. And it’s a production garden and it’s an opportunity for education for the staff and the public and we’ll have signage and that sort of thing.”*
- *“our focus this year during Earth week will be on local foods and particularly on gardening. So we want to talk about that with staff. Every year we do something different. Last year we worked on waste, another year we worked on toxic chemicals and we’ve worked on energy. So we have a focus during Earth week each year to help people particularly draw the connections to health, which sometimes seems like a long dotted line because people say “well that’s the health of nature but why is it health for me?” And so we have to paint the picture of how we’re all connected and how we absorb what is around us in terms of chemicals and nutrients and so it’s a good opportunity for that.”*
- *“Food Smarts committee are also pretty sustainable conscious anyway. So we talk about local foods a lot. We talk about what can we do to highlight local foods. But it’s also more, its primary focus is to educate staff, customers and patients on how to eat right. How to take care of yourself through the food choices that you make.”*

Sub-theme element. Staff programs: Participants described different efforts taking place for improving staff awareness and increasing participation in supporting local.

Such programs not only emphasize the use of local foods but also address overall health and well-being of hospital staff.

Community Supported Agriculture (CSA) program: Convenience and education: A staff CSA program was recognized as a significant factor in raising awareness and support of staff around the benefits of consuming local, whole foods. The program is offered on a year-round basis and the shares are picked up on site at the hospital, a factor identified as incredibly convenient for members. The program was described as experiential with a strong educational component. Recipes and interactive education supports staff in learning about the particular items arriving in their share and ways to include them in family meals. Such an encompassing program was recognized as a supportive and feasible way to encourage staff to support local producers and incorporate more local foods into their diet.

- *“So the whole learning experience is great. It’s really great on the pickup days because I learn a lot about produce that I hadn’t used before. People say, “What did you do with the fennel last week?” and I learn what other people do.”*
- *“There are people here that say “it’s Christmas every week.” Oh yeah, because you get some awesome fruit and vegetables. And it’s fun getting things that you’re not as familiar with too. There have been a few things that I wasn’t even sure of what it was and they’ll come out with maybe a recipe to help you with – kale is a good example. A lot of people don’t know how to cook kale. They’ll put a recipe out there and then when people come and pick it up, sometimes we’ll share, “oh this is what so and so said that the kale chips are supposed to be really popular.” So I’ve learned a lot about the local produce from that program.”*
- *“But what our goal has always been, this kind of came out of the Food Smarts committee, was if we’re going to run celery root or Jerusalem artichokes, can we provide people with a recipe that day or if we know it’s going to be in the CSA, can we coordinate running that vegetable and “oh, by the way, here’s the recipe.” And then on Thursday, say we run it on Monday or Tuesday, then on Thursday they get this big hairy, whatever it is, and they go, “oh, I think I can try that.”*

Preventative health care: Some participants described another component of staff oriented programs focused more broadly on preventative health care and support of staff health and well-being.

- *“We insure our own staff. We pay when a staff member gets sick, we pay when staff members have higher risk for health problems, so obesity, hypertension, diabetes. And so they have, thankfully, only again over the last few years decided to invest in keeping people more well. So this is a good thing.”*
- *“So to be incentivized to keep our own population healthy is a great step. And so therefore Home Base exists to help people reduce their risk and do education on nutrition, which is a huge piece there.”*
- *“Because the whole Food Smarts thing is being driven by our Home Base program which is, our self insured. The idea, if you want to get to the root of it, the idea is, we need our staff to eat better so they stay out of the hospital because then we can keep the cost of health care down. I mean that really, it’s super forward thinking compared to the rest, that’s not the way the rest of the country thinks.”*

Sub-theme element. Positive feedback: Participants perceived that feedback and responses from staff and visitors regarding the use of local foods in hospital meals was generally very positive. Positive reactions and surprise that quality foods were being produced right in Montana was a prominent response to hospital efforts to promote and use local. Such positive reactions have also worked to encourage conversations and further education around the topic. Successfully presenting previously unknown ingredients was also identified as encouraging to people in expanding their cooking repertoire and nutritional knowledge.

- *“They do because we have all of these initiatives that we’re working on. Like kamut. We try to promote kamut a lot and that comes from a local producer and when you first bring it in, they’re like, “oh, what is that?” And then after a while they’re like, “oh, yay kamut is on the menu again.”*
- *“With new dishes I think, a lot of it, you do it one time and it’s, a few people get it. It spreads by word of mouth so then it comes around a second time and that person goes to whoever they’re working with, “hey, I got this last time. Or I heard from Linda this is*

awesome." You know? So then it picks up. And so then it becomes more popular and they go, "oh, it's not weird anymore."

- *"I've heard that resonate on the floor where I hear people that I've worked with, they'll be like, "oh I don't go down there, everything's fried and greasy." To now, I'll come up with my plate of rainbow potatoes and they're like, "oh my god, is that from downstairs?" Yeah and it's delicious, it's great! So I've definitely seen a change at that level."*

THEME 3. Local food in health care:

Health care institutions were identified as a unique setting in which to promote the use of locally-sourced ingredients. Significant themes emerged as 1) opportunities associated with the health care setting in promoting local food and 2) challenges associated with the health care setting to participating in the farm-to-institution movement.

Sub-theme. Enablers: A primary theme that emerged pertained to the unique environment created within the health care setting. Facilities promoting health and well-being naturally serve as ideal opportunities to discuss the benefits of healthy, nutritious diets consisting of whole and local foods. Participants explained that such a setting is one in which people are expecting health education and are therefore more receptive to these types of conversations. As a result, this serves as a conducive environment for outreach and promotional efforts of supporting local producers and foods. In addition to this opportunity for education, participants also discussed the logical connection between the health care setting and healthy food service meals. As a setting for health promotion and healing, such facilities should apply these messages and put them into practice. Physicians and nurses promote healthy dietary patterns and foods offered on site should therefore reflect these principles.

- *"And it's just a good way to raise attention and because it's in a hospital there's an automatic expectation that it's linked to health. That this is something that's good for you."*

- *“The hospital, because of all the people and the general focus on health and a generally well educated population, it’s a great place to educate and to talk about it.”*
- *“And so I think that well I’m a nurse and I’m in health care so let’s talk about the health impacts because sometimes that’s lost I think in some of the conversations. And so that’s one thing that I think the hospital can say is to continue to shine light on and say, “yes, this is good for the natural world, it’s good for our economy and it’s good for our health and we support this because of X, Y, and Z.”*
- *“But we’re a hospital and we have a responsibility to promote wellness and I think that idea is kind of catching on a little bit more. We can’t be feeding you foods that give you diabetes and then treating you for it upstairs. That’s almost a conflict of interest.”*

Sub-theme. Barriers: Several participants perceived a disconnect in the country’s mainstream health model and associated this with challenges to further developing farm-to-health care efforts. The Western health model was described as an unsustainable and reactionary approach to health. Rather than emphasizing preventative health care, medications and significant medical regimens are prescribed in response to the manifestation of severe health issues. Nutrition was identified as a fundamental component of a preventative approach to health care rather than a reactive health care system. Therefore, the current model was not perceived as favorable to promoting diets with whole, local foods and was not perceived as one that emphasizes nutrition in general. Such a lack of focus on nutrition creates a challenging environment in which to gain significant support among both staff and visitors of the hospital.

- *“Health care is backwards because health care makes money when people are sick, not when people are well. So that’s a perverse incentive, as they say it.”*
- *“And so, I’m very surprised at the physicians. And I think this is changing, but still. Some physicians don’t even talk to you about diet. They write you a prescription and send you on your way. They don’t talk about fixing long term, preventative.”*
- *“And that’s not the hospital’s stance, that’s my personal bias. But I feel like the models of hospitals as they exist today are dinosaurs and they’re not ready for this change. I mean, look around the country and hospitals aren’t making money because it’s not a sustainable model.”*

THEME 4. Local Food Use and Producers:

The last dominant theme that emerged from the interviews pertained to the current dynamics and processes associated with locating and using locally-sourced ingredients into food service meals at the hospitals. A variety of factors serving as enablers and barriers were identified in using local foods in the health care setting. Unique circumstances are associated with using local food in comparison to using foods supplied from a larger GPO contract and result in varying opportunities and challenges.

Sub-theme. Enablers of using local foods in the hospital setting: A variety of factors were identified as serving as enablers for hospitals in promoting and using local foods.

Sub-theme element. Benefits of working with local producers: While the dynamics vary for hospitals in working with a larger distributor compared to local producers, participants identified several components unique to working with producers that supported continuation of efforts in using local foods.

More personal relationships and direct communication: Participants identified personal relationships as a significant contributor to the positive experiences associated with interacting with local producers. In comparison to the larger, corporate-like distributors, participants described enjoyment and appreciation for building these personal relationships with local producers. Such relationships were highly supportive of positive work experiences and have helped to facilitate greater use of local products. Developing a relationship with a producer and establishing familiarity with a particular person supported efficiency and greater outcomes in working with these local businesses. The ability to engage in conversation based on familiarity and understanding, along with

the greater accessibility of staff and more direct communication, were all identified as enablers for hospitals in sustaining partnerships with local producers.

- *“And you actually get to talk to the person who’s in control of the production. Not talking to a distributor who needs to talk to their distributor who needs to talk to their producer. You’re so far removed. So you’re not as removed, you can actually contact them which is nice.”*
- *“I’d say I appreciate the relationship piece. They’re calling me and it’s not just, “hey, what do you want to order?” It’s, “hey, how was your weekend? What did you do? How was the drive up to work?” It’s just a little more to it. You know, it’s guys that probably, if I saw them out, I’d probably have a beer with them and that would be ok! It’s very welcoming.”*
- *“Plus you also are able to have more of a personal relationship with those people and you can get a little bit more of what you want. They can tailor to what your needs are a little bit more.”*

Aggregated food system: Western Montana Grower’s Cooperative: Themes emerged around the benefits of using the framework of an aggregated food system, or a cooperative (coop), in order to more productively work with local producers and achieve positive, working relationships. The primary coop currently operating in Montana is the Western Montana Grower’s Cooperative (WMGC) and was specifically referenced on numerous occasions. Perceived benefits included the streamlined process associated with working with a coop, whereas communicating with a representative on behalf of growers results in a more efficient process of determining logistics of supply and demand of ingredients. Another positive dynamic of working with a coop was the greater variety and availability of products. Participants discussed ways in which this culmination of local products from across the state creates such an appealing model in using more local foods at the institutional level.

- *“I think that’s a real benefit of having so many farms represented. Because, you know, we get fruit from raspberries, cherries, apples, plums, melons. And there’s no single*

farm that does all of that, plus the amazing range of vegetable produce. And then they've [WMGC] been adding more and more options."

- *"But I can tell you the beauty of the coop is you are dealing with one person and not 17 different farms up the Flathead and down the Bitterroot. So it's streamlined."*
- *"That one contact. It's shocking, yeah. They send you the list instead of, you've got six emails from six different producers. They're funneling all their information through the coop and the coop sends that out. You place your order and bring it to your door. So the communication is great. Knowing what's coming to plan the menu. And sometimes, they'll throw us a little bit, if they have an abundance of something for whatever reason, they'll give us a special on it. I don't know how many organizations out there are actually using them for their food service operation. I think a lot of the restaurants that believe in this like to deal with their farmer. You know, the coop has to mark up a little bit to pay for what they do. But yeah, just having all the information in one place, and then one contact saves you six phone calls twice a week probably."*

Flexibility, adaptability and organization: Commitment and adaptability of local producers in fostering relationships with the hospitals was recognized as incredibly supportive to the process of using more local foods. A sense of appreciation emerged around the level of flexibility that producers offered in working to eliminate any challenges encountered while developing a working relationship. While transitioning from large distributors to working with smaller, local producers, hurdles were perceived as inevitable. However, the level of flexibility and commitment offered by local producers has facilitated a much smoother transition.

- *"The Grower's Coop has been just phenomenal. They've been so helpful. They've adapted to what our needs are. So for instance, the first year, even figuring out where they could park their truck. Things with hospitals are so complicated! So where can we do that, knowing that there's going to be dirt involved, and things like that."*
- *"Everything always goes really smoothly. Every now and then they're a little bit short and then we just call them and they make up for it. They're very easy to work with. Very professional. Most of the time they're on time."*
- *"I've never noticed a trouble with getting anything. And you know, sometimes they might forget to put something on the truck but the producer is going to call me up and say, "hey, my bad. It'll be here this day."*

- *“We don’t usually have too many issues with the local producers that I’ve been involved with. They’re always really willing to do whatever they can to help us out to keep the business.”*

Delivery to the hospital: A beneficial quality identified by multiple participants was the ability of local producers to deliver the ordered items on a regular and reliable basis to the hospital. Dependability and commitment were recognized as key, supporting components of having the ability to sustain relationships with local producers. Adaptability and personal relationships were associated with the flexibility in delivery schedules that hospitals have experienced with local producers and have further supported positive relationships among producers and hospitals.

- *“The delivery dates and stuff like that have just been negotiated and set up. We might be more apt to try to work with them instead of being so structured, we might have a little bit more flexibility with local actually.”*
- *“He did it before Thomas the thing with Big Sky Beef. That was something I was impressed with when I got here. It was like, “wow, you use local beef.” He just drives it up here and delivers it to you and it’s all grass fed and that’s awesome.”*
- *“Whereas the locals, they come in and you’ve got somebody that checks the order in and you immediately know we’ve got five cases vs. 225 cases, you can just put it away, you’re done, you don’t even have to think about it.”*

Good work ethic and pride in their work: Another component identified as a benefit of working with local producers pertained to the genuine sense of pride associated with their work. Participants identified a sense of commitment among producers in the products being brought to the hospital and dedication to supplying only quality food items. Such high standards and work ethic fostered stronger working relationships and has even transferred a sense of pride among hospital staff through offering local products in the food service meals.

- *“And you can tell, you know that he loves what he’s doing, that he’s, that those animals are not being abused. I mean that’s, to some that’s important. Some people don’t want to think about it. That he, it’s his thing. He’s really passionate about it.”*
- *“I think, if I could say kind of in a casual term, a gentlemen’s agreement is kind of nice. There’s a lot of trust, there’s a lot of pride in their product. So as far as if you’re not satisfied with the product, they take so much pride that they want to make sure that they fix it. And so I think that more of the old gentlemen’s agreement and kind of the old morals and values on the quality of food, that’s their livelihood and you can tell that they’re very proud. So that’s nice.”*
- *“But I think that because of the relationship they’re very forthcoming and they’ll let you know that, because of the weather or transportation or something to do with the distribution process that you know, might be limited but it all comes down to they don’t want to put their name on something that’s not as the same quality.”*

Sub-theme element. Quality: Quality of local foods was identified as an extremely beneficial and supportive factor to using more locally-sourced ingredients in the food service meals. A strong consensus among participants reflected great approval and appreciation for the level of quality occurring in the local food products. Such high quality was associated with facilitating further support and enthusiasm for using local foods at the hospitals.

- *“but there’s just more appreciation and more of a cognoscente thought process once you realize something was local it just seems like, as much as it’s local it almost seems like it’s kind of exotic. So you treat it like that type of an ingredient. You just really treat it the best that you can without doing necessarily too much to it. So I don’t think, if it’s a challenge at all, it’s just more work on the back hand but it’s something fun, going through some of the offerings they have, some of the seasonal items”*
- *“Nature does the work for you. I’ve got a great rainbow, handful of rainbow, locally grown tomatoes. And you don’t have to do anything to them. It’s like, “oh my gosh, that looks delicious.”*
- *“Yeah it’s very true, you know the product price, as far as, we’re spending less money to get a greater product and you can’t have, there’s kind of that saying like, you start with something, a mediocre stock, a mediocre sauce, it’s the same way with anything that you buy. Especially with the produce, we don’t have to necessarily try to do too much with it if we have a great starting point, so.”*

Sub-theme element. Missoula is a uniquely supportive community of local

food: Many participants thought the hospital's location was an essential component of the support and degree of change associated with the use of local food in food service meals. Participants recognized that broader community support and enthusiasm was critical in developing the framework of change and successful transition in using more locally-sourced ingredients within the institutional system. As a result of the support and enthusiasm for local food within the broader community, advocacy for local food within the hospitals was more easily facilitated.

- *“Well, only that Missoula probably is exceptional. Or at least very strong in its commitment to local agriculture and availability of local foods and that is really helpful. And I feel in some part it's great that the hospital is involved and is doing this. And yet because I'm aware of all that's going on, I think “well we sure should be involved!” Because some of our sister hospitals in other states, Providence is in five states, they don't have anything like this and have no access.”*
- *“So I think it partly depends on what is easy and available in a community and so really the two places that are doing the most with food are Missoula and Portland, in these five states where Providence is. And I think a lot of that is because of what's available in the community.”*
- *“I think that's why Missoula thrives. Because people support local so well. You go to other communities and that's not the case. I just came from Butte, MT before I moved here and it is not the case there. Missoula is impressive and unique and I think that you're going to find some communities that are progressive and then you're going to find some communities that just aren't.”*
- *“Absolutely. It starts with the community itself and the culture of the community. Definitely I just think Missoula is very unique in that way. Other towns are just not there yet.”*

Sub-theme element. Growing popularity of local: Participants perceived a growing support for the local food movement across the various levels of a community and identified this as benefiting the efforts of local food initiatives taking place within the hospitals.

Growing support in the health care setting: An increasing level of awareness and support within the health care setting and among health care physicians was identified as one social level in which the local food movement is growing. Increasing support among health care staff facilitates conversations with patients and visitors and works to further educate on the positive outcomes of eating local, whole foods.

- *“Absolutely. I mean, again, especially with different multimedia. I use my Facebook page a lot to be like, “hey, did you see this article from this website about how the Environmental Working Group did a study on some toxins that are in our shampoos that we use every day?” And I posted it on my Facebook page and a lot of people I work with will see that and so it becomes a conversation here. It might not be a conversation they have with their patients but they certainly have with their families and I would definitely say that I have noticed people switching to like, homemade lotions that they’ll bring in. So there’s certainly an increasing awareness, from my perspective anyways”*
- *“But I don’t know if it’s happening other places. Although Adventist, they’re a huge health system and they’re really focused on nutrition and they keep an all vegetarian kitchen in a lot of their hospitals. I know that – well the Adventist health study is one of the largest next to the nurses’ health study and the Framingham Heart Study. Like those, the Adventist health study is one of the larger more comprehensive studies that’s run by their hospital. So they have pretty compelling evidence for the way they run their kitchen.”*
- *“But certainly among my peers, it’s big conversations about what we’re doing for our health. Is what we’re doing for our patients healthy for them? Whether or not we’re having that direct conversation with them, it’s like, “hey, what’s in Miralax? Is that really a good thing to make someone take? Or should we be offering warm prune smoothies? Maybe that’s an option?” Yeah, there’s some good conversations.”*

Growing support in the larger, community setting: Participants spoke to a growing trend throughout the country in which people are becoming more aware of issues around sustainability and healthy diet, and is a trend that’s resulting in increasing demand for change. Awareness of the benefits of consuming whole, nutritious food is increasing and the farm-to-table movement has continued to gain momentum. Such awareness and

demand for change was identified as supportive of the shifts in food service programs being made at the hospitals.

- *“I think probably everyone can go to the grocery store and pick out fruit or vegetables in season and out of season but I think as a community we love to get our locally grown and produced items. Like the Farmer’s markets and Dixon melons. And I don’t mean just Missoula, I mean people in the local area”*
- *“People, with media being the way it is right now, people are more aware of it. My god, you go into a market now and you can find two different kinds of kale in most super markets. So views might be changing.”*
- *“So I know it’s happening there and I know at Intel, out in – Is it Intel? The computer place out in Oregon? They turned one of their whole campus cafeterias vegetarian in honor of local foods and kind of being part of the local food scene. So yeah, lots of other places.”*
- *“I think in any kind of readings or in any kind of literature, there is a lot of farm to table, there’s a lot of discussion about local foods. More, I wouldn’t want to call it marketing but I would call it awareness than there ever used to be.”*

Sub-theme element. Networking: Networking was discussed in several different contexts and described as being very beneficial for hospitals in making changes within kitchen management to incorporate more local food into meals. Meetings, conferences, and other informational seminars have become much more prevalent in advocating for local food and available resources. Conferences sometimes work to bridge local producers with health care facilities and other institutions in order to facilitate dialogue between the two entities and initiate working relationships. Informational meetings also provide resources and productive guidance for health care facilities striving to work with more local producers. Partnerships between health care facilities was also identified as beneficial in supporting one another and troubleshooting any particular challenges arising in using more local food.

- *“And so to do this, we met in 2012 with a group from CFAC and the Western Montana Grower’s Cooperative and we were actually talking about the food stream so how*

could we get more regular produce. And they mentioned that they have this CSA option themselves and that they could deliver.”

- *“Well I didn’t go last year but we have gone for a couple of years over the last three years to a sustainable, they have a big conference over there at the Double Tree. And we’ve attended that so there were some ranchers, farmers, you know, local producers. It was kind of a conglomeration of the full food chain where you have those that produce the food, those that purchase the food, those that consume the food. Those that support the process and so I didn’t go last year but it’s something they’ve had every year. I can’t remember what they call it. I think Sustainable and Local Constraints. So anyhow, I’ve attended that, so we’ve kind of had the networking that we’re able to meet and mix with some of the folks.”*
- *“You know, mostly them coming to us or you hear from the guy over at St. Pat’s, “hey, I’ve got this guy.” Or you hear from another account that they’re doing “this” and that’s been kind of nice or you hear from the guy up in Kalispell, “hey, I’m doing this, this and this.” I know that we used to get kamut straight from the kamut vendors”*

Sub-theme. Perceived barriers to using local foods in the hospital setting:

Participants perceived several factors serving as barriers to the hospitals trying to use more locally-sourced ingredients in food service meals.

Sub-theme element. Time needed to work with multiple producers: Limited time was recognized as a restricting factor for hospital staff to use local food. A commonly mentioned challenge was the extra time associated with working with multiple vendors. Participants explained that multiple vendors are often needed in order to fulfill the quantity and variety needs of the hospital food service programs when local farmers produce smaller amounts of food and specialize in a particular food product. The extra time needed to communicate with multiple vendors, along with the time needed to make multiple orders and manage multiple deliveries, was identified as a significant challenge for the hospitals in coordinating their menus.

- *“So you know, as much as it’s easy to just, for a lot of people the reason why a lot of people don’t like to have multiple vendors is because it’s more difficult. You spend more time ordering, putting more deliveries away.”*

- *“I think that it’s about the vendor relationships and working with them that yeah, at first it might be difficult just getting something established and then obviously putting in more leg work to get on the phone and receive another delivery.”*
- *“But I’ve done a lot of things that are, the initiatives especially in the restaurant setting are to buy local, especially when you have a local clientele. But I think that a lot of people just fail in their execution because they try to treat it like they do with other vendors, you know, it is more of a personal touch and so – you know if you order from one of the larger companies, there’s that less personal touch there, it’s just going through a computer. They find it more of a hassle, so that is a big challenge. And so they’re just like, “ah, it’s not worth my time.”*
- *“The whole sustainability, going green, the buying local, I think that people want to do that but most people aren’t willing to put in the work to at least get the ball rolling.”*

Sub-theme element. Quantity and availability: Participants discussed the challenge of providing more than 1,500 meals per day in the hospital. With such quantity demands, adequate availability of local food supplies was identified as a barrier to increasing the amounts of local foods used in hospital meals. Being that local producers are often operating at a much smaller scale, participants perceived that if a sudden interest in significantly increasing the amount of local foods being used was to occur, producers would be unable to meet this demand.

- *“And about four or five years ago we set out to do more with beef because we serve a lot of beef. And it was just really difficult to get and partly because the University was buying up a lot of the local beef.”*
- *“And you just can’t hardly get that around here. We would deplete the valley, more or less. And that’s an interesting conundrum because why wouldn’t we grow enough food for the people who live here? And when we can grow that food. And some things we can’t grow, bananas, oranges, if we really want those, the hospital can’t be completely local because they are going to meet peoples’ needs and wants. But in the areas that we can, it’s just interesting that well, we just can’t produce that much.”*
- *“The only thing I can say is the fact that we have 1200 employees and obviously the patients and the people we might be serving and catering and things that would love to do more with maybe a smaller company but that would be a certain concern that restaurants definitely can get away with it more because they don’t have high a volume, their needs are much smaller. That might create an issue, not to say that we’d necessarily be ordering a ton but we’re serving much larger audiences than you serve*

in say a local restaurant would with, if they're only serving a couple hundred people a day vs. six times that amount."

Sub-theme element. Cost: A prominent theme that emerged pertained to the challenges associated with the cost of local foods compared to discounted prices acquired through GPO contracts. Finances was recognized as being limited and somewhat restrictive on local food initiatives, as effective management is necessary to balance higher costs of local foods with limited resources of the hospital.

- *"And then of course, the cost. The cost weighs in and I think they do a really good job measuring what they can spend on and what not."*
- *"We just have to figure out ways in which we can incorporate as much local and have it be, you know, feasible from a cost standpoint and not have to raise prices."*
- *"I think that the challenge is always going to be the finances. And that's always where they're going to find barriers. But to break that barrier is communication and awareness."*
- *"They need to charge more. And then it's a problem for them because it's a domino effect and it's kind of like you need to have more volume in order to lower your price, but how do you get to that volume? You can't take the order because you can't produce that much. Even if you can't produce that much, you have to turn down orders. And so the growth, their own small business growth model is really tough. Because you have to make money to grow but you have to grow to make money."*

Sub-theme element. Seasonality: A common barrier that emerged was the uncontrollable factor of seasonality. The growing season in Missoula, Montana is not ideal for growing crops year round. Participants were frustrated with these circumstances, as the limited growing season results in limited local supplies.

- *"I mean obviously, if you could take away these long winters. The short growing season doesn't really help us all that much."*
- *"Because of our climate, we have kind of a short growing season. So that's definitely a barrier right there"*
- *"I feel strongly about it but at the same time it drives me crazy when it's this time of year, it's like, ok. I go the Good Food Store and it's like, California or Mexico, you know?"*

Or do you bite the bullet and go to the Costco and buy something that's conventional because it's ripe."

- *"it's really a challenge in a larger facility and in a state or a climate where you don't have it year round."*

Sub-theme element. Demand: Participants identified demand as a barrier to increasing support and consumption of local products offered in the food service meals. As mentioned earlier, participants strongly perceived that support for the farm-to-table movement is growing at the community level and at the health care level. However, the existing, opposing position to this support is that being a young movement, significant education and further adoption still needs to take place. Participants recognized several aspects associated with a lack of demand or support for consuming local foods being offered in the hospital meals.

Local connotes a different, unappealing taste: Uncertain of change and more comfortable with established eating habits: A key factor in hesitating to support and consume local foods pertained to a sense of dissatisfaction with the presented items. Participants described this sense of dissatisfaction in response to various changes made within the kitchen management to expand the hospital's local food initiative. For example, offering locally-sourced, grass fed beef was reported to taste differently compared to the more familiar, conventionally corn finished beef supplied in the country's broader food system. Other changes, such as the removal of the fryer and fried items, as well as other less nutritious "comfort foods," has been met with a degree of disagreement and frustration as well. Participants perceived some of this dissatisfaction to be a result of hesitation in exploring new or unfamiliar food items. People may have a deep connection to the foods

they are familiar with and therefore be tentative to expanding beyond this established repertoire in order to experiment with different foods.

- *“The issue with that, and I know it’s better for you, and that’s the thing, you know, changing peoples’ minds that when you’re using a grass-fed, natural beef product, it’s literally changing the structure of the meat. And so we, as Americans and maybe even more so of the Montana palate, we grew up eating corn fed beef and where, you know, they’re fattened before slaughter. And you get that nice marbling, which makes for a really yummy steak and a really juicy, tender steak. To trying to do the right thing for our diet, for our bodies, and going to a natural beef, which is completely grass-fed”*
- *“I mean, the fryer going away was a big deal. People are still pretty upset about that. You know, and I was guilty of it too. You walk buy and they have like fried mushrooms, fried mushrooms are delicious when you’re stressed out and hungry. So I think there’s some resistance to that. But you know, there was resistance when we went to electronic medical charting. There’s always resistance with change. And it’s understandable. Especially when it comes to food, people don’t want to feel policed. Like if I want to eat fried food, then I want to eat fried food. Which is fine.”*
- *“We’ve got into a lot of lentils lately though from Western Montana Grower’s Coop and just changing the culture and peoples’ perception on what food, they have this idea of what it was when they had it served by their mom or dad. But you got served pickled beets growing up and I understand why you don’t like them now but, have you ever tried a roasted, golden beet? It’s delicious!”*

Lack of interest in eating local: In addition to some dissatisfaction with use of local foods due to unfamiliarity and hesitation, another associated barrier was a more general lack of interest and investment in the changes taking place. While changes in menu items reflect a greater use of local, healthier foods, such efforts are meaningless if customers won’t ultimately support the products and purchase them. Hospital food service meals can consist of more local and nutritious items, but a disconnect in interest and support from customers in participating in the farm-to-table movement can leave initiatives disjointed.

- *“it’s ironic that in a hospital where we want people to be healthier that we’re serving way bigger sizes of foods that’s not healthy. And yet that is what the customer demands. So that’s been interesting and we’re making some progress but it has been*

quite difficult because the cafeteria doesn't want people to be angry with them and people don't want to feel like they're paying more for less"

- *"And you can tell them, "this is good for you." And they're like, "well I'm not eating a cheese burger because it's good for me."*
- *"So it's a challenge, especially when people leave these walls and they go out and they're tired and they just want to get something that's fatty and just almost a comfort food to them, so I think it's always a challenge."*
- *"Definitely a little resistance with change. There's been a few times people have been like, "why can't you just have a regular hot dog?"*

Sub-theme. Lack of knowledge around local foods and resources: Participants identified a lack of knowledge and accessibility to resources as another barrier to strengthening support for local foods initiatives. The first aspect pertained to a lack of awareness by hospital staff and visitors around the farm-to-table movement and the supporting arguments for consuming local, whole foods. The second aspect pertained to a lack of awareness around the resources and potential opportunities available to facilitate increased use in the hospital meals.

- *"we sell so much chicken. I guess, and we've never even looked at it. Because I don't think, and I don't know, maybe we need to ask the question, "is there a chicken supplier who has the processing facility?" I mean, are they maybe going to take on chicken? Is there some way that we can incorporate local chicken into our menus, not just beef. Fish? Forget it. Right? But we sell a lot of chicken. That would have some serious impact."*
- *"It will be slow though. It takes a lot of time to just plant a seed and then it takes like, the germination time from someone putting the idea in your head that kale may be a good thing to eat, to going vegan and eating locally all the time, that's a huge shift in someone's life. It's a whole shift in your lifestyle, in your priorities, so I think it's going to be really slow."*
- *"Because even if you look at genetics – this maybe is getting off topic for you, but if you look at just how hard it is to get your food, to know that your food is safely organic vs. "natural." There's such a knowledge barrier between the average consumer who walks into Safeway. You have to teach them there, like what they should be looking for first and why this carrot is better than that carrot and why that's even a priority and why you should spend 45 cents more on this carrot."*

Local Producer Interviews:

A variety of themes related to local producers working with larger institutions emerged from the interviews and are summarized in Table 3. The themes were organized into five primary themes and significant sub themes fell within each of these groups. The primary themes included: 1) Enablers for local producers to sell local; 2) Barriers for local producers to sell local; 3) Enablers for institutions to use local; 4) Barriers for institutions to use local; and 5) Components needed to support local producers. Sub-themes and sub-theme elements are presented and accompanied by relevant quotes below.

Table 3 Themes and sub-themes of interviews with local producers

Emergent Theme	Sub-Theme(s)	Sub-Theme Elements
1. Enablers for producers to sell local	Passionate leaders in the institutions	Supportive, lasting relationships between producer and institution
	Capacity is present to meet quantity demand	
	Western Montana Grower's Coop (WMGC)	Convenience of pick up: Provides access to small, remote producers
		Marketing for local products/ producers, expanding market opportunities
	Mission Mountain Food Enterprise Center (MMFEC)	Use of "seconds": Reduces food waste and profit loss by opening more markets
		Allows for selling year-round
	Montana Communities/ community members support local food	Local institutions increasing in participation
Teamwork and networking among producers to learn/support systems		
2. Barriers for producers to sell local	Reaching market saturation	Competition among producers: Many producers in the market with limited demand
		Market for core (highly demanded) crops is saturated: Everyone plants same crops
	Hard for new producers to become established: High start up costs and many established producers	
	High turnover in institutions: Need to reestablish relationships and communication	
	Lack of consistency in demand and commitment from institutions	
	Regulations	Food safety, certified organic, U.S. certifications
		Corporate policy at conventional grocery stores
Unpredictable weather, short growing season		

	Economy of scale	Lack of economical infrastructure for small scale producers
3. Enablers for institution to use local	Western Montana Grower's Coop	Streamlines communication, ordering and delivery processes
	Using "local" as a marketing tool	More variety and quantity to meet larger demand
4. Barriers for institutions to use local	Seasonality: Lack of consistency for meal planning/selling of products	
	Need reliable, consistent service	
	Cost: Local is more expensive	
	More convenient to work with a large distributor: Takes more time to work with many local producers	
	Processing	Lack of time and resources to prepare/cook meals
5. Components needed to support local producers	Networking and communication between producers and institutions: Joint problem solving	
	Reorganization of infrastructure for small scale producers to meet the demand	
	Menus, food preparation, and eating that's based on seasonality	
	Education	Health and social benefits of local, whole foods
	Expand the market: Conscientious farming and untapped markets	Cultural shift towards emphasis on nutrition and local foods

THEME 1. Enablers for producers to sell local:

Food producer participants identified a variety of factors that support their ability to sell their products at a regional and local scale in Montana. Identified factors did not all necessarily pertain specifically to working with hospitals in Missoula, Montana, but also to experiences working with other institutions as well such as schools and restaurants.

Sub-theme . Passionate leaders established in institutions: The importance of having passionate and motivated staff within institutions was seen as beneficial for productive working relationships between local producers and institutions. Staff members inherently dedicated to the farm-to-table movement serve as beacon leaders within the institutions to advocate for local foods and encourage their use in meals. This dedication

results in greater creativity and receptiveness to developing solutions to challenges that may arise in working to source food from local producers. Such individuals serving in management positions and responsible for food procurement were recognized as playing an essential role in expanding the use of local foods in institutions located throughout Montana.

- *“And I’m afraid that’s where we are. If you can deal with people that run institutions that say, “I get it, this is better food. Show me the logistics.” We could solve those problems. Not that it doesn’t take creativity, but I know that it can be done because Mark is doing it and he’s been doing it for five or six years. But if you don’t have someone in that position where, “oh, I get it,” it’s not going to happen with the green Jell-o and Mac and Cheese guy. “*
- *“But Cheryl has taken it [Good Food Store] where it is now. Who knows where it would have been without Cheryl. That’s not what I’m trying to say. But as far as produce goes, it was on the road to where it is now. They’ve always had a serious, I mean, Paul, those guys have always known what they’re doing.”*
- *“One of the biggest supporters has definitely been Jenny in Kalispell. She’s had a Food Corp with her for the past, I don’t know, two or three years. And she just tries to support as much as she can within her budget. And she’s getting local beef patties for burgers at the lower valley processing up there and they’re actually cheaper than what her previous supplier was, it was by a couple of cents, you know. It was great to show her school board that they could support local and it not be more expensive.”*

Sub-theme element. Supportive, lasting relationships between producer and

institution: Accounts between local producers and institutions with more history and established collaboration contributed to more mutual understanding and smoother business transactions. Such relationships were also identified as ones associated with mutual trust and commitment in order to continue the working relationship. Therefore, such relationships supported continued, and even increased, use of local foods within these institutions, further strengthening the region’s farm-to-table movement.

- *“For a couple of them, there’s three that I can think of. They’re re really great customers. So we provide them with really great service. And we meet with them in the wintertime and we say like, “this year I was thinking about doing this, can you do*

that?” And they design their menu around what we’re going to provide. And these are all, well two of the three are high end restaurants. Plonk and Scotty’s Table. It costs a lot of money to eat at these places. So he’s fine.”

- *“Our biggest restaurant customer is Biga Pizza. And he’s not nearly as high end but he’s just as enthusiastic and he’s a great customer in that we have those two delivery days but if he needs something on off days, he’ll come and pick it up. Because we just don’t have the human resource to stop doing what we’re doing and send somebody over to bring three bunches of oregano. So he’ll come and pick it up, which is great. And I know that my wife and I also really enjoy those relationships and proud to be part of these restaurants and part of the town and you just feel like you’re part of a great community.”*
- *“More than anything else, I mean we have good relationships with everybody we work with and they, when things go wrong on our end, they are understanding and when things go wrong on their end, we’re understanding and so, so that type of thing”*

Sub-theme. Capacity to meet the quantity demand is already present:

Participants strongly and adamantly spoke to an already present availability and capacity to meet increased demand from institutions. A common sentiment reflected on the dynamic that if a particular institution has passion and dedication to using local, the necessary quantities and logistics can absolutely be worked out. “If there’s a will, there’s a way,” reflects the perception of participants that opportunities do exist to overcome challenges associated with developing direct institution-producer relationships.

Furthermore, participants perceived adequate amounts of food were either currently being produced, or could be produced in the near future, to meet any rising demand in the amounts of local food that may be requested from larger institutions with greater quantity demands.

- *“I think that we could definitely solve these problems in institutions if we were thoughtful about how they were approached. If they’re on the same page in terms of values, it’s pretty easy, we just do logistics.”*
- *“Yes. We just did an internal survey of the Coop and more than half the growers that we have talked, it was over 50% that said, “I would like to increase production.” These people are ready. Most of the folks have the land to do it. And we’re getting to the point where we have the capability as a cooperative to service these people, to distribute to*

them, to market to them. It takes a little bit of time I think. Yeah. The answer to that in short is I think definitely, especially with the number of growers coming onto the scene.”

- *“Could be. It certainly could be. We have a lot of land. I mean at this point it’s not. But we have 170 organic acres and across the street I think they have 300. And 150. There’s like 400 organic acres within a half mile, quarter mile of our house. That’s pretty, I mean, if we turned that into gardens, it could feed all of Bozeman. Well, maybe. I mean, Missoula has tons of area. I just think yes, we could easily. If that happens. And we certainly have distributors within the state who can get it to all those little places.”*

Sub-theme. Western Montana Grower’s Cooperative: The Western Montana Grower’s Cooperative (WMGC) was identified as a significant benefit for local producers in expanding access to Montana markets. The WMGC was referenced numerous times throughout the interviews and was discussed based on the unique benefits that result from working with them and participating in a cooperative (or coop) model. The amounts and varieties of foods being requested by participating institutions is coordinated and balanced among coop members. This coop model, in which food items from numerous producers are compiled, was identified as creating opportunities for individual producers to work with institutions that otherwise would not be feasible due to their small-scale production. Several benefits of WMGC membership particularly emerged from the interviews.

Sub-theme element. Convenience of pick up: Provides access for small, remote producers: Montana is the 4th largest state in the United States. Participants discussed challenges associated with long travel distances and the resulting time and resources needed to make deliveries throughout the state. Producers removed from populated areas particularly encounter these challenges and face a dilemma in which time and resources used in making deliveries is time and resources taken away from production. Participants identified the WMGC as significantly reducing these barriers. As a member, the WMGC will

travel to pick up products from producers and make deliveries to participating institutions. This pick up service was regarded as particularly supportive of isolated, small-scale producers who otherwise would be unable to deliver their products to interested institutions. The WMGC was therefore recognized as creating greater opportunities for small-scale producers in reaching additional markets and facilitating greater amounts of time to focus on production.

- *“So it’s been great for a bunch of farmers who don’t live close to town. Or who are trying to do direct marketing to customers or direct sales to restaurants or grocery stores is really hard if you live an hour away. But the Coop will come pick up the food nearby you, they have drop off points”*
- *“Huge benefits. The farms up north, they couldn’t exist without the Coop. And they’re paying their bills, they’re doing really well.”*
- *“Yeah. And they go to Bozeman, Butte, Helena, Whitefish, you know, up to West Glacier. They go all over to places that nobody is going to drive to deliver three boxes of salad mix. But when they have a variety of accounts, it makes it worth delivering and opens up a lot more availability for people to be growing.”*

Sub-theme element. Marketing for local products and producers: Expanding market opportunities: The WMGC was also identified as helping to expand market opportunities for small, local producers. The Coop emphasizes outreach and marketing of local products to institutions. It actively works to increase the number of institutional accounts, picks up products from the producers, and then delivers orders to the institutions. In return for these services, producers have more time and resources to focus on production. Participants perceived such a cooperative model as facilitating greater production rates and filled markets, as well as a more effective overall process from growing to delivery.

- *“They’re [WMGC] a tremendous boon and they’ve done a great job with some grocery stores and some restaurants up and down the valley. There’s a lot more local food in*

circulation now than there was because of the Coop. They're doing great. And they're poised to do more."

- *"we sell a couple of items specifically through the Grower's Coop. Which essentially means that we don't deal with restaurants or grocery stores at all. We let the Grower's Coop do all of the in-between work and we pack what we need and we put it in the cooler for them and they pick it up. It's really nice."*
- *"Ours [WMGC model] is based off a model outside of Philadelphia. So they looked to other successful models like that and so this grew out of that as a distribution and marketing function of what they do. So basically they would sell their food as wholesale and we add on their margin in order to pay for the service and then they can spend more time doing what they're doing. They can grow more food, they can grow better food. Growing more food of course, the more you grow the cheaper it can get too."*

Sub-theme. Mission Mountain Food Enterprise Center: Mission Mountain Food Enterprise Center (MMFEC), a processing facility in Ronan, Montana, was identified as facilitating working relationships between local producers and institutions. MMFEC provides equipment and facilities for small, start-up producers to process or freeze their products before delivering an order to an institution. There were several themes around MMFEC that emerged as particularly beneficial for local producers.

Sub-theme element. Use of "seconds": Reduces food waste and profit loss by opening more markets: The Mission Mountain Food Enterprise Center provides access for small producers to process or freeze their products. This ability allows producers to process and sell "seconds." "Seconds" are the products not considered to be in perfect condition due to not having an ideal appearance. As a result of not having a perfect appearance, these products, otherwise in adequate condition and completely edible, are not sold at farmers' markets or grocery stores. Participants identified "seconds" as a significant source of food waste and therefore, also a profit loss. However, with the ability to process and freeze products at MMFEC, local producers are able to use these "seconds"

and distribute them to institutions, particularly to school systems. Such processing capabilities were identified as creating space in markets to sell additional and quality local food ingredients.

- *“And those [seconds] are being used in a really fabulous way instead of being shipped off for compost, they’re going straight to the schools, which is super awesome. So we had a couple hundred pounds of cucumbers that went to the schools this past year that, you know, the cucumbers were just bent instead straight. So it makes us feel good that they’re being used well even though they’re not number one in quality.”*
- *“Or let’s say there’s a massive hail storm, which there was this past year, a big hail storm in the Bitterroot and we had one grower you had a couple thousand pounds of zucchini that we couldn’t sell to grocers because, well, it looked like it had been through a big hail storm. But it’s still great food, we can send it up to MMFEC and they can shred it and freeze it and we have it all year round and it can go to the schools. Actually the hospitals have been buying it more than anyone to bake in bread or whatever they do.”*

Sub-theme element. Allows for use of otherwise wasted food and for the selling of products year-round: The processing facilities offered at Mission Mountain Food Enterprise Center was identified as helping to not only reduce waste of “seconds” but to also reduce waste of other products that may have otherwise been unused. The processing facilities were identified as a way to freeze and store products in order to expand business beyond the limited growing season and sell year-round. Such a change has therefore resulted in increased profit as well.

- *“So they [MMFEC] garner all the interest, we source the food. Sometimes we give it to them directly. You know, for example, apples or something like that directly to the schools without any processing. There are certain things for the snack program in particular where they will do some processing or if we have just a lot of green beans, for example, we’ll go to MMFEC, we’ll say we have all these green beans, they’re not going to last, school is out of session, will you guys processes them, or freeze them for us basically. And then we have this product and together, we’ll go to schools and try to find ways to get rid of those green beans.”*
- *“And then it also enables us as a cooperative to have products which we can sell throughout the course of the year. I’m thinking of the winter when I normally wouldn’t be employed because if it weren’t for the eggs and the cheese and stuff like that, we*

wouldn't have enough money to pay any staff. When I first began here, Dave was $\frac{3}{4}$ times in the winter, I was driving and I was probably half time. And this year, Dave's full time, I'm fully time and we have our accountant who's $\frac{3}{4}$ time, we have a driver who's essentially full time. And a lot of that's due in part that we're able to sell things year round."

Sub-theme. Montana communities and community members support local

food: Participants identified a generally growing support for local products and the use of local foods throughout communities. Such support helps strengthen the farm-to-table movement, thereby supporting Montana's local producers and facilitating working relationships between producers and institutions.

- *"But all the food that CFO grows is sold in the Missoula Valley, for the most part. Some that goes to the Grower's Coop is sold to other places in Western Montana. But the business wouldn't exist if there wasn't an appreciation and ethic for local food."*
- *"I can say, this is not an entirely subjective opinion, but we're pretty progressive in Montana. I think part of that's due to the larger towns in Montana all having universities and ag. Universities. But even outside the university, people in Montana are really independent, fiercely so. And despite all the connotations that may go along with local and organic and stuff like that, you can talk to any rancher up in the Mission Valley that's pretty adamant about wanting to support local. Where we are is that we're really progressive. We've had pretty worldly growth rates as far as the Coop is concerned and I like to attribute a lot of that to the work that we've been doing."*
- *"Well I think Missoula is maybe a little bit ahead of the curve as far as local. You know, that's the nationwide trend, knowing the story behind your food. So local is big, out there, getting bigger and Missoula's been a little bit above average in that respect I think for a long time."*

Local institutions are increasing participation in the local food movement:

Participants perceived that not only are community members supporting local food, but an increasing number of institutions are also supporting local foods. An increasing number of institutions throughout Montana were perceived to be sourcing local foods and working with local producers. Such an increase is further opening market access and supporting local producers.

- *“We’re taking baby steps. It’s just beginning. We’ve done a great job in terms of the local food movement and picking all of the low hanging fruit. Farmers’ markets, boutique restaurants and the natural food grocery stores. We’ve crossed those boxes, right. And not that I want to diminish any achievements there. Even those are sort of low hanging fruits.”*
- *“And it [WMGC] started with several growers. I think the sales of the first year were somewhere around five or six thousand dollars. Four years ago, I think we began the CSA program, the last two years in a row we’ve grown, I think 36% and in this past year 55%. We just reached over a million dollars in sales this year.”*
- *“Again. Like a lot of people’s attitudes have totally changes and they’re willing to make exceptions now in order to get this local product. People, more people are coming to us than us going to them and when we do have supply problems or something like that, people, I’m not getting yelled at on the phone for a half an hour. There may be some disappointment but then there’s also like, ok that’s fine, but I still want something from you so what can we do? Let’s work this out”*

Sub-theme. Teamwork and networking among producers, support systems:

Participants perceived a general support system among producers and identified this as beneficial to successful business and the ability to expand into other markets. Guidance and support are available for new and less experienced farmers and producers are working together to more productively work with institutions.

- *“And we have over 200 customers so I guess the point of that is getting some of these projects off the ground initially is, it takes a lot of work and a lot of time. Time that we haven’t always been able to give or make. And the Food Corp folks, that’s what they’re there for”*
- *“But no, they’ve [Food Corp. students] really been invaluable kind of on that end. Getting all the people excited, getting in this particular area in the Mission Valley, they’ve started a collective buying program where they will round up several smaller school systems who don’t necessarily have the money to get carrots processed for the SNAP program or something like that. So they round up a bunch of people together, get the order, and then they come back to us which is really nice. So we’re all talking to fewer people. They’re talking to us instead of talking to 20 different growers, we’re just talking to them instead of talking to five or six different schools.”*
- *“Which I’m all about and it’s a great thing, but it’s also a hard position to be in, where I am because we as an organization doesn’t have time to train people to grow. So in the community, there are certainly other growers that are willing to mentor newer growers and stuff like that.”*

THEME 2. Barriers for producers to sell local:

A variety of factors were identified as barriers to establishing or maintaining working relationships between local producers and institutions. Such factors were related to the dynamics of working with staff at institutions, the current level of supply and demand for local products, economic structures and food regulations.

Sub-theme. Reaching market saturations: A theme that emerged from the food producer interviews pertained to the current situation in which the market and demand for local products is becoming saturated. These participants perceived a narrowing market that limited outlets for selling local products. While some producers would like to expand their outreach, demand for local foods appears to be stalled.

Sub-theme element. Competition among producers: Many producers are in the market with limited demand: Increasing competition among producers was seen as a challenge. While particular communities throughout Montana may be especially supportive of local products and foods, the number of farmers and ranchers outweigh this population and are facing a local food supply greater than the demand. Several participants described this dilemma as one in which the needs of all invested, “low hanging fruits” are now being met. Individuals, natural grocery stores and restaurants committed to using local foods have already figured out ways to meet their needs and have already established relationships with the WMGC or individual local producers. Therefore, entering markets that are inherently less committed to supporting local is much more difficult to accomplish. The existing population dedicated to local foods is small and has ample options, resulting in a saturated market with significant levels of competition among local farmers and ranchers for business with this population.

- *“It’s this line. Like on one side, there are people who want to buy local food. Whether these people are customers of the Good Food Store or customers of Scotty’s Table Restaurant or the Missoula Community Coop. There are people already aligned with these values and we are killing each other to meet their needs. There’s more farm owners than those people need. So there are farmers being left out. The supply is greater than the demand for people in this sphere of values.”*
- *“So it would be really hard. I mean, this is, Missoula is in a tough spot in that we have a local food scene that’s like Portland but we have a population that’s like Missoula. We have all these farmers and all this excitement and six restaurants. Where Portland’s got 60. And the Coop is in a similar spot where if the Coop was serving Portland or serving Seattle, they would be doing five million a year and they wouldn’t have the cost because internally they’re dealing with farmers squabbling over who gets to sell what. And if they were serving Portland or Seattle there would be enough to go around. There would be enough market to go around. So it’s a really tight spot.”*

Sub-theme element. Market for core (highly demanded) crops is saturated:

Everyone is planting the same crops: In addition to the perception that there is a general saturation in the demand for local products, saturation is especially happening around food items that are particularly easy and cost effective to grow. Such high levels of saturation in these specific items create challenges for new producers trying to establish their business. Food waste and profit loss can also become intensified by high levels of competition as a result of the limited growth still available in core crops and other areas that are relatively easy to make money in.

- *“I mean, the growers in our community have done exceptionally well. It’s just that right now, I guess to answer the question, there’s not a huge amount of growth left in the areas that people can make money in.”*
- *“But now it’s kind of changing. If you’re interested in the Coop, Neva – have you seen the report that she wrote? It’s definitely worth looking at. I feel like what’s happened with the Coop is sort of reflective of the whole local farm situation meaning that we’re saturated around these items that are relatively easy to sell.”*
- *“Everybody seems to want to grow the same things. So it gets pretty competitive.”*
- *“They do about the same at both markets. People who might tailor themselves to markets might do well. Our type of farm would never make it. I mean, there’s nothing really unique about us other than our longevity. We grow pretty traditional crops.”*

Sub-theme. Difficult for new producers to become established: Participants spoke to a variety of challenges currently faced by new producers. A common sentiment reflected was the level of difficulty associated with agriculture and establishing an agriculturally-based business. High start-up costs to acquire adequate land, equipment and supplies can be extremely expensive, and in a business in which returns may not be extremely high, balancing these costs can be challenging. Additionally, participants felt the region is saturated with producers that are well established with loyal customers, creating a competitive and challenging market for new producers to enter.

- *“It would be really impossible for a new farm to break into that. Super hard. Because there’s only like six or seven restaurants that would do it and they can get anything they want from the Coop. Why would they go with “I’ve never heard of you, you’re knocking on my door.” And what they don’t get from the Coop, they get from us. And we’ve been serving their needs for 20 years. We have really good relationships with these people. They’re our friends.”*
- *“The fact is, the bigger block is the availability of land because it’s so expensive.”*
- *“Yeah those things tend to go together. Where the people are, I mean, you know. I used to say, why would anybody, I mean say this 40 acres of ours is worth a half a million dollars. Well, why would anybody invest with equipment and everything and almost ¾ of a million dollars so they can make 60,000 dollars a year? I mean, it just doesn’t work out. We did it because we started with nothing and bought it as we went along. But never would you have slapped that money down. And that’s what it would take. There’s only two ways to do it. The way we did it, which is probably the way a lot or some of these young farmers will do it now. You know they’ll expand as they get older and make more money and they’ll buy it gradually. But nobody’s going to, unless you’re born into a farm, can afford to buy that much land for a good farm.”*

Sub-theme. High turnover in institutions: Need to continually reestablish relationships and communication: Participants were frustrated with high turnover in food management and how it affects the ability to maintain relationships with institutions. A lack of communication across changing staff can result in a lack of congruency in an institution’s working contract with a producer. Food item requests can change

unexpectedly based on differences in preference, interfering with a producer's production and potentially resulting in a supply of products no longer spoken for. A change in food management and staff also requires a reestablishment of understanding and processes of the working relationship in order to have common understanding of one another.

- *"The Coop has run into situations where personnel has changed and suddenly, the same institution just won't buy anymore."*
- *"I think another issue is, in terms of the institutions, is turnover. For example, two years ago we grew a lot of lemon cucumbers because the University really liked them and would buy a lot of them and then their, I'm not sure what rank it was, but someone in the food buying sector changed and they didn't want to use lemon cucumbers anymore."*
- *"The other thing with the restaurants is their chefs seem to come and go two or three times, a couple times a year. There seems to be a really big turnover and so we're forever just trying to make introductions and talk to them and we have, we're not nearly at the level of trust and intimacy, if that's the right word, that we have with the Good Food Store."*

Sub-theme. Lack of consistency in demand and commitment from institutions:

Participants identified a lack of solid buying commitment from institutions as a significant barrier to increasing the level of business interactions occurring between local producers and larger institutions. As small businesses with limited resources, some producers felt they were unable to take large risks by working with institutions without a solid buying commitment. Taking such risks could result in wasted resources and therefore lost profit. While this perceived lack of consistency and commitment can be a result of staff turnover, participants also described separate, unexpected changes in an institution's meal planning after conversations and planning had taken place. Producers who were unwilling to make significant commitments until institutions are willing to make significant commitments was seen as problematic.

- *“It’s not always reliable, but no market is so that hasn’t really changed. With fresh vegetables, you don’t, I mean one week they need X amount and then the next week they over order something and then they don’t. So it’s always, you can’t really, it flows pretty well but it doesn’t flow as well as you’d like it to from the grower’s point of view.”*
- *“And so right now it’s a lot of like, well, we don’t have growers that necessarily want to make a huge commitment because we don’t have institutions who are willing to make the huge commitment. We, us as a cooperative and our individual growers are not in the position just to take these large risks. We can’t.”*
- *“And they say, “ok I’ll buy from you this much cabbage at this time. You plant it, I’ll be ready to buy it.” And it’s not an iron clad contract, it’s like, you can grow it and they still might not buy it. Because if the people they sell it to say, “oh sorry we went out of business,” or “we’re getting out of cabbage, we’re never going to serve cabbage again.” So it’s more like a, we all agree to do the best we can and honor this agreement and we’ll see where it goes.”*

Sub-theme. Regulations: Some participants identified food regulations and certification processes as a barrier to increasing market access and developing additional contracts or working relationships with institutions.

Sub-theme element. Food safety, certified organic, and U.S. certifications: Participants thought it was challenging to stay informed of food safety regulations and changing certification processes. The wide variety of certifications creates a complex decision making process on part of producers as well. A theme that emerged around certifications was that choosing not to pursue them can restrict access to the institutional market and reduce the number of businesses that will accept the products. While producers recognized regulations and certifications as an effective way for institutions to ensure customers and staff that their meals are safe, they were also recognized as a barrier to some smaller producers.

- *“And it’s possible that we will have to, that the Coop will be required to become GAP certified anyway through the Food Modernization Safety Act.”*

- *“Yeah. Very much so. I mean, we deal with one institutional buyer that they have a sanitarian and boy, a lot of local producers are just frustrated to heck. In terms of rules and regulations that change on them. And so much so, one they think it’s ridiculous. And it can get extreme sometimes and it’s just not worth their time. You know, to jump through the hoops and so that tends to be a barrier to entry for a lot of producers. And some are, probably most are not nearly as strict, but that can be a barrier for some local producers.”*
- *“Not necessarily. You know. This guy’s got an acre of vegetables and the sanitarium wants him to put a porta potty out there. You know, it’s like, “oh my gosh.” I’ve got an acre. You can walk into the house and use the restroom. You know, it’s almost comical, some of these restrictions and requirements and things like that. So, some just kind of throw up their hands and say, “I’m not worried about this particular institution. It’s just too hard to deal with.”*

Sub-theme element. Corporate policy at conventional grocery stores: A

common sub-theme that emerged around compliance with food safety regulations and certifications was the especially challenging corporate policy of conventional grocery stores. Larger, corporate grocery stores were identified as having particularly complex processes in order to carry local products. The level of complexity was recognized as a significant barrier to producers and greatly limited access to this particular institutional market.

- *“There’s a process you have to go through to get things approved [in conventional grocery stores] or things like, for value added goods, you have to have UPC’s and stuff like that. And things that we’re just getting into.”*
- *“I’ve had them in the local Albertson’s. Um it’s not worth it, going through their corporate offices. It’s just, I mean, if you have, if you could supply them all, that’s one thing. But Albertson’s will let you get into their local stores but it’s more hassle than it’s worth.”*
- *“like Lucky’s is a chain. And you know, if your cheese is that good, they’ll buy it. It’s just, I had to go through corporate with that, but and the natural grocers are owned by Vitamin Cottage which is out of Denver also and they’re huge. And so you have to go through their corporate. And I don’t know if farmers are willing to go through all those hoops. “*

Sub-theme. Unpredictable weather and short growing season: Another

challenge identified by participants in establishing and maintaining relationships between

producers and institutions is the weather and growing season in Montana. Various participants referred to broader challenges that accompany agriculturally-based livelihoods and the dynamics of such a heavy reliance on the uncontrollable factor of weather. Unpredictable weather conditions can threaten production and greatly influences food quality. Participants paired this challenge with the challenge of Montana's short growing season. Producers rely on productive growing seasons to have the ability to sustain themselves throughout the rest of the year. A natural link between a successful, productive growing season was recognized with the capacity to meet the needs of institutions and fulfill their commitments.

- *"I see the work they're doing as far as land stewardship is concerned and you know there's a lot of people who have a lot on the line. And it's kind of a tenuous position to be in. To live in Montana, the growing season is short"*
- *"weather could do anything at any time. And with that in mind, you know, they could lose everything they have in a matter of a couple months, which means I could lose everything I have in a matter of a couple of months. So that's the way it is."*
- *"Mostly you know, I just keep saying, the overall thing is challenging. I mean you can't really afford to have another job and so you have a 100-110 day growing season and we have to make our annual income in that 110 days. So the whole thing, the whole chess board that you put together to produce because, you know, maybe there's easier ways but the way we do it is not that easy. So it's just like this sprint from right now until October or mid September. So as you get more physically tired it becomes more challenging. And things that don't bother you in May bother you in July."*

Sub-theme. Economy of scale: Multiple participants identified economy of scale as a significant barrier to expanding market access and increasing the amounts of food items being produced and sold.

Sub-theme element. Lack of economical infrastructure for small scale producers: A prevalent theme emerged around challenges associated with economy of scale. Participants perceived a lack in need infrastructure for production and distribution

of small-scale, local producers to occur in sustainable ways. Small-scale production often connotes smaller profit margins. Resources and capacity to process and distribute products may therefore be limited and in turn, restrict a producer's flexibility in reducing customer prices. As a result, effectively competing with lower, commodity food prices was viewed as a barrier.

- *“And I, this is probably jumping ahead, but I think that a lot of the infrastructure that’s really needed for local food to be distributed and to become more sustainable for its producers is not really there yet. Like distribution, processing, packaging, branding, all that stuff is kind of, I think in the early stages. At least in this part of the world in Montana.”*
- *“Part of that is because the cost is lower. So institutional markets, you get a lower cost, generally wholesale you get a lower cost. So you need a higher retail. And I imagine that institutional markets ask for even lower costs than even a lot of the wholesale markets. So that trickling down to the farmer, for us, we wouldn’t be able to produce our salad mix for a whole lot cheaper than we’re doing now just because we don’t have that much space. But if we had 10 acres of salad mix, we could probably do it. So there’s an economy of scale there that can be difficult for small farmers.”*

Processing: Processing was identified as a particular challenge pertaining to working on a smaller production scale. Institutions sometimes request that foods be delivered pre-processed in order to shorten meal preparation time and reduce time and staff costs. These requests can pose as barriers to producers, as limited resources of their own may reduce access or capacity to process their products in an economical way.

- *And getting what we want, you know, baby carrots chopped into carrot coins. And they sure will serve lettuce but we need romaine hearts washed, chopped and in a bag. And the small farmer in Missoula can’t do that. So this is where like, if they had made the choice, this is what we want, we could make it happen.*
- *Another hurdle is that many of these restaurants want to buy individual cuts and we can’t handle that inventory. Or we haven’t figured out a way to do it economically.*
- *You know, as a for instance. This isn’t exactly right, but it’s close enough for illustration purposes, it’s close enough to accurate to be good to illustrate. We take trailer, horse trailer trips every other week to right now, Superior Meats where we process and this depends a little, but let’s say we have four animals on that horse*

trailer. The mileage, the fuel, the labor to deliver those four animals to Superior on a per head basis is about the same as it would take on a per head basis to ship a semi load to Nebraska. And so there, you know, that cost, you know, when you start thinking about how much difference scale makes, is really big.

Distribution: Distribution was identified as another challenge for small-scale producers in working with institutions. Challenges were associated with small, remote producers and the expansive regions of Montana in which extensive traveling is often required to transport products to various customers and institutions. Such distances were identified as a barrier due to limited resources in time and money. Such limitations can therefore restrict producers' access to markets and opportunities to develop working relationships with institutions.

- *And one of our early suppliers in northern Montana did these great little lentils that are grown here in Montana and some other grains and things like that. I had the owner tell me, "you know, I sell a lot of products like in Portland, a good distribution there. You know, I sell product in Denver. But I don't sell any product in Montana." Because they didn't have any way to distribute their products. There just isn't a very good distribution network here. And customers want to buy direct but, a 25 pound of lentils is heavy. It isn't a real expensive item but it's dense. And the cost of freight or FedEx to get it there is almost as much as the cost of the product. So that becomes just a real hurdle there.*
- *But that distribution company that would buy that whole animal and distribute it to different places, that's hard to do on a small scale and it gets real pricey when you start doing that on the small scale. And that's why the scale is the reason that the commodity is cheaper than we can do it at a small scale locally. And then distribution also becomes a challenge. If you can deliver stuff in semi loads, size lots, it becomes much cheaper than smaller lot sizes. And so that's a big challenge also when you try to market locally.*

Higher production costs than commodity food production: A significant theme relating to economy of scale emerged around commodity prices of food compared to actual prices reflected in local products and ingredients. Participants voiced frustration with food price dynamics. While local producers are in a position of needing to charge prices reflective of production costs in order to avoid accruing losses, commodity priced foods

inaccurately reflect costs and are based on subsidies. Such an inaccurate reflection in costs allows commodity priced foods to appear significantly cheaper than locally-produced foods. Competing with foods marked so much lower can serve as a barrier to local producers in supplying their products to institutions. A common sentiment was that competing with commodity foods more accurately reflective of production costs would make gaining support and business from institutions easier.

- *“In my perfect world things would actually cost what they cost. So I think that’s the biggest challenge is they’re getting these super cheap items that that’s not the real price of them. It’s just a subsidy or that sort of thing. So I do think that we would be able to be a lot more competitive if the things they purchased were the real price.”*
- *“Yeah, there are many hurdles. Obviously, well maybe it’s not obvious so I’ll, but a very big one is price. And so our cost for, to produce this product and sell it locally is higher than the commodity costs are, than commodity prices are. And so if one of these businesses want to do business with us, it’s for reasons other than costs. We can’t do it cheaper than they can get it from the commodity channels.”*
- *“You know, if you could somehow measure total cost, maybe it isn’t more. If you could think about, and I can’t, I’m too slow minded, but if you could think about all the other costs of our commodity model, I’m not a big fan of it. You know, if you could think about obesity, if you could think about environmental degradation and those costs, then if those costs were added on to the commodity cost, I would gladly compete with that all day long! But they aren’t. They aren’t added on there. Those health issues, the environmental issues and thinking about what the Farm Program subsidizes production so their costs can be lower. If you think about all of those things, then I think the local production is a better model, I really do. But it’s not our system and I don’t have the knowledge or the energy or the understanding of how to fix what we’re doing now.”*

THEME 3. Enablers for institutions to use local foods:

Participants perceived several factors as contributing to supporting institutions in working with local producers to include local foods in their meals or food service program.

Sub-theme. Western Montana Grower’s Cooperative (WMGC): WMGC was identified as facilitating connections between institution food services and locally-sourced ingredients. By working with the WMGC, institutions are able to conduct business with one

representative of Montana’s food producers, resulting in a streamlined and more efficient process. As communication, ordering and delivery is all coordinated through the WMGC, institutions are able to conserve resources otherwise spent in working with multiple producers. Participants also addressed the unique benefit of compiled variety and quantity. Institutions choosing to work with WMGC receive products from producers throughout the region, allowing them to more easily meet the quantity needs of the particular food service program.

- *“And if they worked in the wintertime and Safeway was to say, “ok we’ll buy lettuce from you but we’ll need 57 cases every Tuesday.” Dave could say to all the farmers, “alright, this is what I need, who can meet these needs?”*
- *“And in terms of local food, that’s kind of – as far as I can see in this area – that’s [WMGC] the best local food distribution system in the area. So it compiles goods from our area, from the Flathead, from the Bitterroot, from the Missoula area and then redistributes them and the best part about it is that we can service accounts. Like the grocery stores, even though any one farm doesn’t necessarily have enough to provide them with what they need year-round, same for institutions, so it allows us to compile food from a variety of farms and service these larger customers that any one farm would unlikely be able to deal with.”*
- *“If we can make it easier for them to access those products, and they know our truck is going to be there every Wednesday, they place their order every Tuesday, it sure makes their task of replenishing the volume a whole lot easier.”*

Sub-theme. Using “local” as a marketing tool: Support for the farm-to-table movement has continued to expand. Communities are becoming more focused on supporting locally-produced items. This growing support naturally results in a growing demand for local foods across the social levels of a community. Participants identified this growing demand for local foods as a potential outlet for institutions in strengthening their clientele. “Local” was perceived as a very beneficial marketing tool, particularly for restaurants. Using “local” as a marketing technique was suggested as a potential perspective that could be presented to institutions still not fully on board with working

with local producers. Presenting the use of local foods through this perspective can support mutual gain in which the institution may experience a profit increase and producers experience an expanded market.

- *“But if they’re not, we need to really figure out how we can make local food, how we could use local food as a tool for these food service providers to meet their goals. And if they feel like buying our food will allow them to meet their goals better than they are now getting food from Cysco, they might be willing to switch.”*
- *“And that’s a market strategy for them too. They promote that on their menu. You know, locally sourced this or that, it’s beef or lentils or produce. And they use that as a marketing tool.”*
- *“Right now a lot of the push or move towards a lot of local food has become an ego thing in Missoula. You go down to the market on Saturday, every restaurant in town is there. I see every single chef that we sell to because they want to be seen down there. They want people to see them down there. It’s a marketing tool. I don’t blame them because I wish they were buying directly from us but that’s not, I don’t really feel that way. But it’s an ego thing. Even if they’re only buying a little bit. People see them down there. They go back Saturday morning from the market, writing their lunch special for that day or their dinner special for that day, which is from the Clark Fork Market. So yeah, that’s a good thing. It’s getting local food services.”*

THEME 4. Barriers for institutions to use local foods:

Several different factors were perceived by participants as challenges for institutions in acquiring local foods and using them in their food service programs.

Sub-theme. Seasonality: Lack of consistency for meal planning/selling of products: Seasonality was identified as a barrier for institutions in sourcing local products in their meal service programs. Montana’s short growing season limits production and availability of locally-grown products. Institutions were identified as often requiring consistency and regularity in food deliveries to aid meal and menu planning. Supporting local products year-round often connotes planning of menus based on seasonality and the particular products available at the moment. Menus would therefore be changing

somewhat frequently to align with this seasonality and such planning was perceived as challenging based on the lack of infrastructure of some institutions.

- *“They’re [UM] actually one of the biggest customers of the Montana Grower’s Coop. I know that they’re up there. When school’s in session, which unfortunately doesn’t quite line up with the farming season but they buy as much as possible from the Grower’s Coop, which is great.”*
- *“So unless the institutions have very seasonal practices, it’s really hard for them to buy just local food when all of their salads have tomatoes in them. I mean, part of that is just kind of a reorganization of the kitchen and reorganization of the chef’s minds but it’s also much easier for institutions to say that every Thursday, year-round, this what we serve and this is how much we need to buy every week. Like they have really set numbers and as soon as you start messing with, this week we have this many tomatoes, this week we have half as many. I think that can be really frustrating and difficult. So that’s another issue. And I think it’s workable, seasonality in institutions but I think it can be difficult. Especially after many years of not having to think about it.”*

Sub-theme. Need for reliable, consistent service: In addition to a consistent supply of products, institutions were also perceived as needing trusting, dependable relationships. Proving that relationships with small-scale producers can be just as reliable and consistent as relationships with larger distributors was identified as one way to increase the number of farm-to-institution accounts.

- *“Because while as a collective we’re producing more, offering more than we could as a single farm, I’m not sure that the supply is consistent enough for institutional buyers.”*
- *“Well just getting in the door is a problem. Sometimes. It takes a long time. Like Thomas Cuisine, for example, Dave was working on that for a couple of years. Or Wally will tell you that he did that work for a couple of years! But it’s a lot of people being persistent I think, which is kind of – showing them that you can be dependable and consistent is difficult”*
- *“So you know, it’s a finesse thing because chefs are funny. And they’re proud of what they do and rightly so. And they’re proud like me. So you have to walk a fine line and you have to be respectful and you know, it’s, you have to earn their respect and they have to love your product. So that’s a huge thing.”*
- *“Well stores want to put your products on sale. And so you have to be able to work with them on pricing and that kind of thing. You have to be dependable and show up when you’re supposed to. That’s the same with restaurants.”*

Sub-theme. Cost: Local is more expensive: Cost was considered a significant barrier for institutions using locally-sourced ingredients. Due to the smaller scale of local producers, products reflect production costs in order to avoid accruing any profit loss. This necessity of charging prices more reflective of costs can make competition with commodity foods very challenging. Depending on the particular food item, costs between commodity foods and local foods significantly vary. Such price differences were recognized as a barrier to institutions based on their own limited resources. Costs of local products can be higher and therefore, institutions will usually choose to use local foods for reasons other than price. This dynamic was identified as a barrier in that institutions solely focused on profit maximization may not be receptive to working with local producers or paying higher prices, thereby narrowing market availability.

- *“One thing, especially in the natural, organic and local products, just because they don’t have economies of scale. Their prices tend to be higher. You know, then the product that General Mills produces. So for many of our customers, they really need to want that local product.”*
- *“So to a certain extent, that will limit us to a certain, and again, because our product costs more, it tends to be the high end folks that can afford it. And frankly, that’s not Montanans. So that’s a piece of it and as much as we would like to be the product that the family, the young family with growing kids can afford, that’s what we would like, but it’s just not what we’ve been able to do price wise. And so that limits, I think our growth in Montana and obviously a lot of folks live in Montana for reasons other than for high paying jobs.”*
- *“And price is a big deal for them. With goat cheese, organic goat cheese, a lot of Montana is off the table because they’re mom and pop steak houses and you know, they’re not high end, refined, fancy. You know what I mean? It has to be a certain restaurant to use our product. So that’s an obstacle.”*

Sub-theme. Lack of time to work with multiple producers: Working with multiple small-scale producers can require extra time to coordinate, make orders and manage deliveries. Limited time was recognized as a barrier for restaurants in working

with local producers. Limited time can result in restricting the number of producers that an institution can work with and therefore restrict the amount of locally-sourced foods that can be used in the food service programs. Along with this, participants recognized that working with large distributors can be much more convenient due to a streamlined process and cheaper prices. The coordination required to manage multiple working relationships with local producers was recognized as a task that requires skill, time, and dedication.

- *“In many cases, it’s just hard to do. Especially in a setting like the hospitals. They don’t want to have to work with dozens and dozens of suppliers.”*
- *“You know, around here, they’ve got guys walking in in cowboy hats every week saying, “do you want to buy my stuff?” And a lot of them like that very personal connection. But for some restaurants, that’s just impractical.”*
- *“And instead, he has to deal with all of us little farms, and he does. He’s very professional and he’s very good at it. He calls at the right time, he does what he says he’s going to do, we can rely on him. And he can rely on us. But still, you have to understand that his job would be a lot easier if he didn’t have to deal with us all.”*

Sub-theme. Processing: Participants identified processing as a challenge for institutions in working with local foods and incorporating them into meals and menus. Foods arriving from larger distributions are often pre-packaged or processed to facilitate use, such as chopping or preparing certain vegetables or other produce. This processing serves as a convenience for institutions and simplifies the preparation time for kitchen staff. Products from local producers often arrive unprocessed or unmodified. The additional time needed to prepare these foods can be a barrier to institutions in using such local products.

Sub-theme element. Lack of time and resources to prepare or cook unmodified foods: Receiving foods from larger distributors is often accompanied by processing services that makes preparation much more convenient. A lack of this

processing was identified as a barrier to some institutions due to very limited resources. While an institution may be supportive of local products and interested in working with producers, expectations may be in place that the process remain the same and only the source of the food be different. A lack of resources and inflexibility around processing was perceived as a challenge reducing the number of institutions using locally-sourced foods.

Another challenge identified by some participants pertained particularly to the public school systems. Many schools operate on a satellite system in which a central kitchen prepares all of the necessary meals and then delivers them to all the schools. Menu creativity is often limited and restricted in using local, unprocessed foods because of the transportation involved and the significant number of meals that need to be prepared.

- *“So I guess this is about infrastructure and saying infrastructure could be, we need everything to work just like it is now, except the suppliers will be different. In that case we’ll need a processing infrastructure that’s right here, that kind of mimics the processing infrastructure that’s in other places right now.”*
- *“I think a lot of food service directors and their helpers, they were just doing a lot of, you know this isn’t true for every school, but a lot of them were doing heat and serve. And I think it’s especially challenging for schools that have satellite, so they prepare the food there and then they have to send it off to the different locations. I’ve just heard, you know, it’s harder to prepare food for that. What are you going to make that’s going to stay tasting good? So it’s been pretty simple stuff so I think people are trying to get really creative.”*
- *“The processing, you know, we have all the equipment and that’s truly one of the biggest barriers to getting local food to institutions. Most of those institutions don’t have the processing capabilities. Not necessarily capabilities but time, money to pay their staff, they don’t have, you know to cut a squash is a lot of work.”*

THEME 5. Components needed to support local producers:

Several important components across the social levels of community were perceived as integral to direct relationships between producers and institutions. Many of these components, however, were perceived as either lacking or insufficient. Participants felt that

producer-institution relationships would be more productive if these particular components could be fostered and supported.

Sub-theme. Networking and communication between producers and institutions: Joint problem solving: Participants addressed interpersonal communication as an essential component to overcoming challenges faced by both producers and institutions. Participants perceived substantial opportunity, possibility, and feasibility in creating productive and successful producer-institution relationships if such a dialogue took place. There is a strong interest among local producers to supply products at a larger, institutional scale and they are therefore receptive to resolving any current challenges. With such receptivity, equal support and interest from institutions was seen as vital to engaging in productive problem solving conversations. Some participants also recognized the importance of dialogue in order to overcome any misconceptions or assumptions that may inadvertently be hindering fully productive relationships.

- *“If Dave from the Coop were to sit with people from Safeway and it might take three meetings before they get a contract and blah, blah, blah, but I think it totally can be done. I think somebody would need to put the time and effort into it and really the only entity that could do it would be the Coop. They’re not going to want to deal with one farmer. And I think that they could do the same thing with an institution.”*
- *“And there are, we’re willing to do anything we can to work with these groups because we see the value in it. And it’s kind of like a whole new world, really compared to selling to grocery stores and stuff like that. To get people eating well and locally sourced foods on that level is, would just be phenomenal. That’s kind of the Everest, the one place where you don’t find people supporting local food.”*
- *“I think it was interesting because for a long time we were looking at how much the price of a pound was for something and you know, we’re finding out that for schools, it isn’t necessarily priced per pound but it’s priced per serving per student and how much they typically spend for like a protein serving vs. a vegetable or fruit serving.”*

Sub-theme. Reorganization of infrastructure for small-scale producers: As discussed earlier, economy of scale was identified as a challenge for small-scale producers

in competing against commodity food production and prices. Arising from the challenges associated with economy of scale, participants addressed a need for reorganizing the available infrastructure. Some participants suggested the general infrastructure for processing and distributing was already established. However, reorganizing the processes into a more cohesive and structured system could facilitate greater efficiency and capacity for small-scale, local producers to compete against the conventional food system model. An example of this restructuring was to facilitate greater coordination among producers as a community, so that the needs of larger institutions could be more efficiently met. While capacity may already be present, increased communication and coordination could allow producers to more effectively manage their production and distribution.

- *“It would take a group of farmers and organize so that, you know, “you do cauliflower this week” and get everybody lined up in succession. But we’re not there.”*
- *“You can make, I mean if you had something around where you could process it, sell all the side shoots and send it up to the Mission Mountain or something and they could freeze it for schools so you can make more – you have to make more on that plant than just that one single head. You can’t.”*
- *“I guess what I’m trying to say is if we’re able to be really well organized as a community of growers, we can definitely fulfill the need for the food.”*
- *“I think what needs to happen – in this case, most of the infrastructure is there right now to grow the food and process the food and deliver the food. It’s just a matter of making that all flow in a way that is functional for everyone. That is difficult.”*

Sub-theme. Menus, food preparation, and eating based on seasonality:

Another challenge previously described pertained to Montana’s short growing season and the lack of consistency that comes along with this in the products that are available to purchase and use. In response to this challenge, participants identified a cultural shift in eating habits and food preparation as a significant solution to facilitating relationships between producers and institutions. Popularity is growing at the institutional level to

support the farm-to-table movement and incorporate local foods into food service meals. However, such interest is difficult to align with the region's growing season and availability of products if menus don't reflect this variability. Therefore, embracing this variability and shifting eating habits and menu planning to fit within these changing seasons would facilitate greater consistency in utilizing local foods. Such a shift would thereby further support consistency in institution-producer relationships as well and further strengthen Montana's farm-to-table movement.

- *“And others work with that. We understand them and we’ll feature that as such, as a seasonal type product and we believe in the product and it’s a great product. And they let their shoppers know or institutions just know that it’s not available all year round.”*
- *“But I do think that one thing that folks might keep in mind is that seasonal products. So when you’re planning your menus, planning it around what’s available rather than what you’re used to. So we can’t get you tomatoes in November or even in early May. So I think changing the way people think about planning their menus as opposed to just thinking about something that they want to make and then what they would want to use. Like, “well ok, this is what we have available so let’s try to plan around that.” And I think that’s kind of a shift for everybody, not just institutions but even families at home cooking, trying to do local. It’s like, “ok well, I’m not going to have a tomato in November.” So that’s been a challenge too.”*
- *“We need to know our farmer, we need to know our food, we need to eat local and in season. And that would change everything. That would change the culture, that would change the environment all for the better.”*

Sub-theme. Education: Education advocating the benefits of healthy diets and conscientious eating was identified as a component that could be strengthened in order to raise awareness at both an individual and institutional level.

Sub-theme element. Health and social benefits of local, whole foods: Benefits of local agriculture: Education around the benefits of not only local foods, but whole, nutritious foods, was addressed as a component that could further strengthen support for local products. This component reflects previous sentiment that nutrition is not always

perceived as being emphasized in the current Western health model. Raising awareness around the role of nutrition in health and well-being for individuals, communities, and the environment was suggested as potentially supporting greater relationships between local producers and institutions.

- *“And say, “this is great, you’re getting people to eat this green Jell-o and the macaroni and cheese. But really, that’s not food. It’s calories but it’s not going to make you better. What you really need to have is fresh fruits and vegetables. And no, not the ones that come in a can. But the ones that are really fresh.”*
- *“Everything about, almost everything about local food I feel like, is a general positive thing for a society. Food is fresher, it contributes to the economy, the ecology is better. You think of whether a chunk of ground is going to be a farm next to a city? If it’s not going to be a farm it’s going to be a development of some type. And comparing the biodiversity in a development compared to a farm, I feel like the ecological health – we gain ecological health by having small scale agriculture right near a city. We eat better. Our money stays in the local economy. And my favorite, most important thing, is having these farms on the landscape, reminds us of who we are. It reinforces a sense of culture that’s specific to this place”*

Sub-theme element. Cultural shift towards emphasis on nutrition: Some participants addressed the need for a cultural shift beyond general education around nutritious eating. Diet and nutrition was described as a challenging topic to discuss as a result of potentially very value-laden connections to food. Eating habits can be perceived as very personal. Therefore, engaging in conversations around the benefits of local food or of changing an individual’s diet can be received with great hesitation. A larger, cultural shift towards embracing healthful diets could be very supportive of the farm-to-table movement and institution-producer relationships.

- *“Well you know we have this cultural divide. Food and, because it’s so culturally laden in values, it’s really hard to have conversations about it that are strictly about efficiency and dollars and all the rest of it. Unless we’re already on the same values page. Then we can adequately address things. But unless we’re on the same values page, the differing values and the different cultures clash so much that you don’t actually end up having the will. And there may be people who are, I’m imagining it’s fairly polarized, but there may be people who don’t have a real strong opinion.”*

- *“Well we need a cultural shift. We need to eat simply, we need to eat what’s in season, we need to eat what’s local and we need to not eat grapes from Tierra del Fuego in January in Missoula, Montana.”*

Sub-theme. Expand the market: Conscientious farming and untapped markets:

High levels of competition and a currently saturated market for local products was identified earlier as a significant barrier for producers to expand their production or outreach throughout Montana. In reflection of this challenge, food producer participants identified using strategic production to expand the local food market. Competition particularly exists around core, cost-effective crops. While some problem solving may be required to resolve challenges around production or cost, participants recognized that there are a wide variety of specialty items that could potentially be profitable. Conscientious production could therefore open additional markets for producers beyond the food items with a fully saturated supply. Along with conscientious production, participants also recognized the dynamic that while producers are facing competition and market saturation, there are untapped markets with significant space for expansion. An example particularly identified was the untapped market of conventional grocery stores. Food producers expressed frustration pertaining to this market being extremely difficult to enter due to corporate policies and food regulations. Participants suggested that targeting such markets would be a productive “next step” in working to expand business relationships with institutions.

- *“Meanwhile, we’re completely empty at Safeway. You know what I mean? Like we’ve got ten farmers ready to sell the Coop cabbage so the Coop can sell cabbage to the Good Food Store. But there’s not a drop of local food at Safeway, at Albertson’s, at Wal-Mart or at the school district or at the hospitals or at the city jail, county jail.”*
- *“But the potential for this market [conventional grocery stores] is huge. And we’ve been successful with some of the larger grocers like the super ones up in the Flathead. We’ve definitely increased the amount that we sell to them. But the potential there for*

these stores, considering the number of people that they serve, there's years of growth I think. And there's a lot of work that we can do."

- *"But as far as farmers coming in. Yeah, I mean, cause there's always farmers going out. Like there's a big farm leaving production for the Grower's Coop and that's a big hole in corn and cabbage. So yeah, there's room for growers, especially if they pay attention to what crops."*

Results Conclusion:

Research questions One and Two of our study aimed to identify ways in which perceptions and associated individual, institutional and policy based factors create barriers and opportunities for using more local foods in hospital food services. To do this, knowledge and perceptions of hospital staff and local producers were explored through in-depth interviews. Four main themes emerged from the hospital interviews and five main themes emerged from the food producer interviews. The third research question of our study was to identify specific knowledge, skills or resources needed to support partnerships between hospitals and local producers to increase the amount of local foods being used in food service meals. To address this third question, main themes that emerged from the two interview sets were integrated and more thoroughly discussed in the following section, Chapter Five.

CHAPTER FIVE

Discussion

The purpose of this study was to identify opportunities and challenges for hospitals and local food producers to work together in bringing more locally-sourced foods into hospital food service meals. The discussion will first compare the top ranked barriers and enablers, as identified through hospital and local food producer interviews, with those most predominantly identified in the established literature. Then, the discussion will integrate the main themes that emerged from the two sets of interviews. The discussion will conclude with suggestions to build knowledge, skills and resources to address the most predominantly identified barriers to direct producer-hospital relationships.

Predominant Benefits and Barriers

Hospital Interviews:

Data collected from this study helped identify factors that enabled, or created barriers, for hospitals to incorporate local, whole foods into their food service meals. The main enablers included: Passionate staff; quality of local food; more personal relationships; Health care institutions are a natural setting to support local; productive food service management; networking; and supportive community (see Table 4). The main barriers that emerged from the hospital interviews were: Food quantity/availability; cost; seasonality; restrictive GPO accounts; lack of processing infrastructure; unsustainable health care model; and demand. These findings are compared to similar studies below.

Table 4 Enablers and barriers to hospitals using locally-sourced ingredients

Enablers	Barriers
Similar to other studies	
Passionate staff	Quantity/availability
Quality	Cost
More personal relationships (with producers)	Seasonality
	Restrictive GPO account
	Lack of processing infrastructure
Unique to this study	
Health care institutions are a natural setting to advocate nutritious and local diets	Western health model is unsustainable and lacks emphasis on nutrition
Food service management	Demand
Networking	
Supportive community	

Several studies have been specifically conducted in the hospital setting (Dauner et al., 2011; Knight and Chopra, 2011; Myslajek, 2011; Sachs, 2011) while other studies have been conducted in non-hospital institutions like schools and restaurants (Izumi et al., 2010; Bagdonis et al., 2009; Kloppenburg et al., 2008; Strohbehn and Gregoire, 2003).

Collectively, these studies found challenges similar to those identified by hospital staff in our study around farm-to-institution efforts. Such similarities are discussed below.

Research conducted in 2011 in St. Luke’s Hospital in Duluth, Minnesota explored the process of procuring local food items and ways in which the hospital culture facilitated or hindered the use of locally-sourced foods (Dauner et al.). The hospital’s GPO account and associated contractual agreements were identified as significant barriers to working with local producers (Dauner et al., 2011). Specifically, the contract required that 80% of food products and supplies be purchased through the primary distributor. The investigators concluded that agreements to purchase significant proportions of product through approved vendors, along with additional purchasing incentives and rebates, can serve as a

limiting factor to purchasing directly from local growers or other unapproved vendors (Dauner et al., 2011; Knight and Chopra, 2011; Myslajek, 2011). Limited flexibility to purchase local foods and the restrictions of the GPO contract were also strongly identified by participants in our study and clearly reflected the literature.

Similar to our findings, the St. Luke's study identified significant challenges to procuring adequate amounts of local foods for its high demand food service program. Findings from both our study and that of Dauner and colleagues (2011) also identified challenges in obtaining the additional resources needed to work with multiple local vendors, such as time and labor hours necessary for the additional communication and coordination. Additional resources were associated with coordinating multiple local vendors compared to the streamlined process of the GPO contract.

Passionate staff, or champion leadership, was identified in our study as one of the top enablers for local food initiatives to take hold within the hospitals. Although high level hospital administrators do not necessarily place emphasis on, or mandate, the use of local, whole foods in food service meals, other hospital staff personally invested in local foods has contributed to on-site achievements. For example, personal investment by kitchen management has resulted in procurement of local, grass fed beef by both hospitals. Intrinsic dedication to the movement was recognized as contributing to the level of willingness and creativity devoted to problem solving efforts. These findings closely reflected those of a study comparing farm-to-school programs in one rural and one urban Pennsylvania school (Bagdonis et al, 2009). Bagdonis and colleagues (2009) identified civic engagement and champions as critical to the development of the farm-to-school efforts in the Pennsylvania schools. As described by Bagdonis and colleagues (2009),

“Such champions may bring to the table personal passions and commitments, or prior organizational agendas. The histories and motivations of ‘champions’ inform their perceptions about the importance and possibilities of FTS [farm-to-school]... Therefore, not only differences across community contexts, but differences between local champions may shape the emergence and character of FTS programs.”

Beyond kitchen management, our study and others (Dauner et al., 2011; Sachs, 2011; Izumi et al., 2010) have recognized that champion leaders within the institutional workplace can also help increase support for local, whole foods among coworkers and hospital visitors.

In agreement with other studies (Kang, 2012; Izumi et al., 2010; Kloppenburg et al., 2008; Strohbehn and Gregoire, 2002), our study found main challenges to using local foods in the hospitals to include seasonality, quality, local and state regulations, and a lack of processing infrastructure. Identified barriers more unique to our study in comparison to other studies included demand and an unsustainable health care model. Our study reported that the main benefits of using local foods in hospitals included support of the local economy and community, better quality of food, positive working relationships, and flexible business contracts. All of these findings agree with other studies that have identified freshness and taste, relationships with local farmers, flexibility of the relationships, and support of the local economy as benefits to using local foods in institutions (Knight and Chopra, 2011; Gregoire and Strohbehn, 2002).

Unique Themes and Sub-Themes of Hospital Interviews: Many of the study’s major themes are similar to others exploring opportunities and challenges for hospitals to source and use local foods. These include food quality, more personal relationships, cost, seasonality, restrictive GPO accounts, and lack of processing infrastructure (see Table 4) However, several of the predominant themes for opportunities and challenges for hospitals to source and use local foods are unique to this study. These unique themes include: Health

care institutions are a natural setting to support local; productive food service management; networking; and supportive community (see Table 4). The findings unique to this study will be discussed below.

Food Service Management: Variation in food service management stems from the particular source of funding, infrastructure of management and the type of GPO account that the hospital has been signed to. For example, flexibility in external spending results from the particular stipulations of the GPO account in which some contracts require 80% of spending to occur within the company, while others require only 60%. Although the two hospitals participating in this study have different GPO contracts, they both hire on the food service management company, Thomas Cuisine, to manage their food service programs. Despite the differences in allotted external spending, core values of the company revolve around a commitment to supporting local farmers and products and results in significant efforts to source any potential ingredients from local producers. Commitment from a management level was identified as further facilitating champion leaders within the hospitals to procuring and using local foods in the food service meals, and therefore was considered an enabler to the institutions.

Supportive Community: The capacity to engage in local food efforts at an institutional level was closely connected to place. A natural relationship exists between a thriving agricultural landscape and a deeper, cultural connection to local and whole foods. A broader community-wide connection and support of local products greatly increases capacity and opportunity to extend these values into the institutional setting. Missoula, Montana was perceived as a community deeply tied to agriculture and thereby associated with greater ability to incorporate local products in food service meals.

Networking: Our study identified various challenges to expanding the farm-to-table movement to a larger, institutional level. Group information sharing and problem solving was a significant enabler that emerged from this study to help overcome some of these challenges. Networking can take place in a variety of capacities. Partnerships among hospitals, health care conferences and workshops bringing together food producers and businesses were all identified as incredibly beneficial to the learning process. Such partnerships and educational conferences were viewed as outlets to compare and contrast experiences of producers and institutions trying to engage in direct relationships. Furthermore, facilitating organized information sharing events also allows for joint problem solving and collaborative learning.

Health Care Institutions are a Natural Setting to Support Local: Hospitals are analogous with wellness and health education. Such an environment is ideal for advocating nutritious dietary habits, food as preventative medicine, and purchasing local as a way to support environmental and community health. For example, the hospital interviews described the health care setting as a place in which patients may expect to discuss appropriate dietary habits as part of a type II diabetes diagnosis. Such a discussion can offer a natural opportunity to promote awareness around the source and quality of the foods a patient may consume. Although some patient diets may not be conducive to local foods while in the hospital (such as liquid or no fiber diets), patients and visitors entering the hospital may at least be more receptive to dialogue and programs advocating the consumption of local and whole foods outside of the hospital setting.

Demand: Customer demand for locally-sourced foods was identified as a significant barrier to hospitals trying to purchase local foods. Purchasing and using more local foods

results in changes across the scope of kitchen management, from food preparation to meal presentation. For example, grass-finished beef tastes differently than corn-fed beef. Participants identified that this difference in taste was sometimes received with dissatisfaction by customers. Customers that were not as aware of the reasons and benefits of supporting healthy, local food products were less willing to adjust to these differences in taste. A lack of customer support for locally-sourced foods was even associated with decreased beef purchases in the cafeteria. Without support of the local food movement, removing fried food items and other unhealthier “comfort foods” from the menu has resulted in frustrated and unhappy customers. The challenge lies in that food service programs often aim to make a profit. While kitchen management may work to offer healthier, local food options, success of the program ultimately relies on sales and customer demands.

Western Health Model Doesn’t Emphasize Nutrition or Preventative Medicine:

The Western health model drives the primary health care model in the United States. Health behavior counseling, illness diagnosis and treatment are most commonly driven by this model and direct the health care system within hospitals. For example, participants perceived appointments with physicians to be rushed, on a restricted timeframe and based on prescriptions for medications rather than preventative health modalities. Hospitals were identified as an opportune environment to advocate for whole food and local-based diets. However, a common perception was that this predominant health model doesn’t emphasize the role of nutrition in health or in preventative health care. Without nutrition as a key element, conversations around consuming whole foods and locally-sourced

products may not be included in a patient's care plan. Prescriptions may be discussed and offered more commonly than discussing nutrition as preventative medicine.

Producer Interviews:

The primary aim of this study was to identify current perceptions around opportunities and challenges for health care institutions to use locally-sourced ingredients in food service meals. To create a more holistic situational assessment of various factors that either enable or hinder the use of local foods in hospitals, the researcher also interviewed local producers and distributors. Their perspectives were explored at a more general scale of establishing and maintaining direct business relationships with institutions. This set of data identified predominant factors either creating opportunities or creating challenges for food producers to sell products directly to institutions. The main enablers that emerged from this set of interviews included: "Local" as a marketing tool; aggregated food systems; champion leaders; capacity to meet demand; processing facilities; and community support (see Table 5). The most significant barriers that emerged from this set of interviews included: Economy of scale; lack of consistency in demand; cost; processing; food safety regulations; convenience of large distributors; and reaching market saturation (See Table 5). Similarities and differences in findings from this study compared to the established literature are discussed below.

Table 5 Enablers and barriers to local food producers selling products to institutions

Enablers	Barriers
Similar to other studies	
"Local" as a marketing tool	Economy of scale
Aggregated food system	Lack of consistency in demand and commitment from institutions
	Cost
	Processing
	Local, state and federal food safety regulations
	Large distributor is more convenient
Unique to this study	
Passionate leaders in institutions	Reaching market saturation
Capacity to meet demand	
Processing facilities	
Community support	

The ability to meet quantity demand and offer competitive prices, seasonality, and lack of a dependable market are often cited in the literature as some of the most significant barriers for producers, and was closely reflected in the findings of our study (Worley and Strobbe, 2012; Izumi et al., 2010; Gregoire et al., 2005). Similar to a study conducted by Knight and colleagues (2011), our study identified barriers for producers to sell directly to institutions to include economy of scale, convenience of large distributors, local and state regulations, lack of processing infrastructure, and overall demand for local food. Also similar to other studies, (Worley and Strobbe, 2012; Knight and Chopra, 2011; Gregoire et al., 2005), our findings identified some benefits of direct producer-institution relationships to include: Fresh, high quality products; support of the local economy; positive partnerships with buyers; and the perception that “local” is a current marketing buzzword that customers of restaurants and other institutions appreciate and support.

Worley and colleagues conducted a study in 2012 assessing new and seasoned Iowa farmers. The farmers participated in interviews and completed a survey ranking potential barriers to selling wholesale and at the institutional level. In agreement with this study (Worley and Strobbe, 2012), findings of our study showed that meeting quantity demands and offering competitive prices were challenging for local farmers. Our findings reflected those of Worley and Strobbe (2012) by identifying the lack of infrastructure as a challenge to producers for processing and distributing their products to institutions. Our findings further reflect those of the Iowa study in that a wide variety of perceived challenges for food producers to sell products directly to institutions were identified, including cost, convenience of large distributors and lack of processing infrastructure.

Enablers of the direct producer-hospital relationship also emerged from our study that reflects findings of other studies. For example, in agreement with Worley and colleagues (2012), our study identified high quality products, the ability to locate new buyers, and positive relationships with buyers as enablers to strengthening relationships between producers and institutions. Another enabler that our study identified in agreement with others (Izumi et al., 2010; Gregoire et al., 2005) was the use of the aggregated food system. This model creates markets for direct relationships between producers and institutional food service management that may not otherwise take place. The aggregated food system merges the efforts of individual producers to pool greater quantities and varieties of products. This combined pool more easily meets the needs of larger institutional meal services by providing a streamlined business relationship similar to larger distributors.

Unique Themes and Sub-Themes: Major themes of this study agree with other similar studies exploring opportunities and challenges for local food producers to work directly with institutional food service managers. Similar findings include: “Local” as a marketing tool; aggregated food systems; economy of scale; lack of consistency in demand and commitment from institutions; cost; processing; food safety regulations; and convenience of large distributors (see Table 5). The findings unique to this study are briefly described below and include: Capacity to meet demand; processing facilities; community support; passionate leaders in institutions; and reaching market saturation.

Capacity to Meet Demand: A common concern voiced in this study showed there is limited capacity for the local food market to meet the large quantity demands of institutional food services. These programs often serve thousands of meals each day and therefore have significant quantity demands. Rather than being identified as a barrier, capacity was identified as a strong enabler of expanding the local food system. Capacity to meet growing quantity demands was perceived as a manageable challenge. More significantly, an enthusiasm and willingness to engage in collaborative problem solving with institutions was expressed so that quantity and variety needs may be met. The sentiment of “if there’s a will, there’s a way,” drove perceptions around capacity, suggesting that if institutional buyers are invested in buying local, producers are invested in problem solving to meet their needs.

Processing Facilities: Montana processing facilities were identified as a significant enabler of working with institutions. These facilities were perceived as creating new markets for direct producer-institution relationships. For example, large contracted distributors offer institutions the convenience of food products that are pre-packaged and

processed. This reduces the amount of resources required to prepare and present menu items. As opposed to the streamlined, convenient service of large distributors, local, small-scale producers often lack the necessary infrastructure to offer these same services. The establishment of the processing facility, Mission Mountain Food Enterprise, was perceived as creating an opportunity for local producers to offer more competitive services in relation to large-scale distributors.

Community Support: Capacity for local producers to directly engage with institutions was closely associated with location. Montana's strong agricultural landscape was perceived as fostering community-wide support for local products and foods. This sense of support and pride for local products at the community and individual levels thereby increases the capacity and opportunity to extend these values into working producer-institution relationships. Community-based enthusiasm for local foods was perceived as fostering support at the institutional level and encouraging producer-hospital relationships to be established.

Passionate leaders in the institutions: Passionate, champion leaders within the institutional setting were identified as a significant enabler of producer-institution relationships. Working with multiple, local vendors often results in increased time and effort to procure local foods. Intrinsic enthusiasm and passion for using local foods was identified as supporting institutions in overcoming potential challenges associated with moving away from the streamlined convenience of a large distributor. For example, food procurement staff who are enthusiastic about supporting local producers were perceived as being more receptive and willing to accommodate more frequent deliveries and

coordinate with multiple vendors, as such tasks are often associated with using more locally-sourced foods.

Market Saturation: Market saturation was identified as a significant barrier to expanding or strengthening the local food system. With collaborative problem solving, capacity to supply institutions and meet their large quantity demands was perceived as a resolvable challenge. Despite this potential capacity, market saturation was identified as limiting current potential for growth. “Low hanging fruits” of the local food market, such as natural grocery stores and restaurants committed to using local foods, have already established working relationships with producers to fill their needs for local products. Supply of local products now outweighs demand of local products since invested individuals and institutions are already engaged in the farm-to-table movement. In other words, Montana is a strongly agriculturally-based state. Being that the “low hanging fruits” have already been picked, there are currently more local food producers and supply, compared to the demand for such products within the state. This market saturation is therefore creating a challenging and competitive environment for new producers entering the market, and is perceived as hindering the ability of producers to expand their businesses.

Integration of Interview Sets

Main themes from the two interview sets were first explored separately, either in the context of hospitals using locally-sourced foods or in the context of local producers working directly with institutional food services. The two interview sets were then integrated to address research question three:

What knowledge, skills, and resources are needed by hospitals and food producers to increase the amounts of locally-sourced food ingredients in food service meals?

From this data integration, identified barriers (by both interview groups) were found to fit within three main groups. These core “grouped” barriers were: 1) Buying commitment, 2) Cost, and 3) Lack of availability. These data are discussed below and explore the particular elements contributing to the group barrier. Following discussion of each group, the researcher suggests various knowledge, skills and/or resources that could be used, or implemented, to overcome core barriers to using local foods in hospital food services.

Buying Commitment:

In the context of local producers working directly with institutions, a lack of consistency in buying commitment was identified as a significant impediment to building and expanding Montana’s farm-to-institution efforts. For example, without a solid buying commitment, producers are hesitant to commit resources such as time and growing space to supply food to hospitals or other large institutions. Small-scale food producers are not often in a position to take a significant level of risk, as unsold products equates to wasted time, labor, space, and money. Wasted resources can be detrimental to the stability of a small business, as financial backing is much more limited compared to large-scale distributors and food corporations. Therefore, without solid buying commitment from a hospital or other institution, working directly with businesses with larger food demands is much less feasible.

Year-round product availability and consistency contributes to greater efficiency in menu planning. As a result, meals can be served on a regular and planned rotation. Availability of local foods, however, is naturally connected to the seasonality associated with agricultural growing cycles. A short growing season results in inconsistent food availability and therefore, frequent adjustments to meal service menus. Inconsistent

product availability and limited resources for meal planning and preparation may be contributing to inconsistent demand and purchasing interest of institutional food services.

Additional processing and preparation time is often associated with using local products and was identified in our study as a barrier and reflects finding of other similar studies. The need for additional resources can be attributed to frequent changes in product availability and the time necessary to plan new menus based on the particular season and available foods. One benefit of working with a larger distribution company is that food items are often pre-packaged or already processed (carrots are sliced, artichoke hearts are trimmed and cleaned, etc.). Receiving food products that are already prepared for use simplifies the food preparation process and helps conserve time and labor hours.

A lack of communication and commitment from an institutional buyer can result in a compromising situation for the producer. For instance, a producer that grows lemon cucumber in anticipation of supplying an institution may find themselves with an acre of the product when the food service menu suddenly changes and the cucumbers are no longer needed. Sudden changes in menu planning and desired products can often be associated with a change in staff or management. Local producers identified this discontinuous communication as challenging. Farm planning, organizing and seed planting need to occur early in the spring. Therefore, farmers need to know what the product demand will be from institutions early on in the year. High staff turnover was perceived as contributing to such miscommunications and unused products. Turnover was also perceived as requiring extensive time and energy to reestablish a working relationship and mutual understanding. High turnover often connotes changes in menu planning and

needed products, and may therefore contribute to a lack of consistency in buying commitment.

Group purchasing contracts were identified as a barrier to using local foods in the hospital food service meals. In exchange for the convenience of a streamlined ordering and delivery process, as well as discounted prices, contracts require varying levels of commitment and in-house purchasing. The restrictions set by the GPO contract can impact the amount of flexibility that the food service management has in sourcing local food products and can restrict potential growth of farm-to-hospital relationships. Such purchasing limitations may thereby contribute to a lack of solid buying commitment with local producers and may be impeding on efforts to increase the amount of locally-sourced products being used in the hospital setting.

Suggested knowledge, skills, and resources to improve buying commitment:

1. Western Montana Growers Cooperative (WMGC): As discussed earlier, the WMGC was identified as a resource that creates market opportunities for direct food producer-hospital relationships. Capacity building aims to address gaps in a community's capacity while building on existing strengths already embedded in the community. The aggregated food system is currently in place and is considered a strength of the state's farm-to-institution movement. Therefore, the WMGC can be considered a strength in community capacity in the context of increasing the amount of locally-sourced products being used in the hospitals.

Strengths of the aggregated food model include streamlined communication for institution food service management, as well as combined production to offer greater quantities and varieties of local products. Formation of more personal relationships, along with flexible delivery schedules have also been identified as benefits of this system. Such perceived benefits

of partnering with the WMGC can serve as capacity building for direct producer-hospital relationships, as such benefits more effectively compete with the services and convenience offered by large distributors. Given this example, a capacity building strategy based on this resource could be to more fully develop the aggregated food model to improve capacity, particularly in the eastern region of the state. Strengthening capacity to compete with the services of a large distributor on a state-wide scale may more effectively support institutional food services and thereby improve institutional buying commitment.

2. Education, Training, and Networking for Hospital Food Management and Staff: Champion leadership within kitchen management and related outcomes uniquely emerged from this study. For example, in contrast to the other general hospital responses, seasonality was identified by kitchen management as an opportunity. Other staff members and the established literature strongly identified seasonality and inconsistent product availability as a significant barrier to using local products in food service meals. While saturation was reached among the group as a whole, participants most directly involved in food procurement and preparation processes viewed seasonality as a creative challenge and opportunity, rather than a barrier. Champion leaders within food management may therefore be considered a significant institutional strength and can be developed as a capacity building strategy. Such creativity and enthusiasm for using and preparing local products should be fostered among kitchen staff. Education and training workshops for kitchen staff may serve as a feasible strategy in promoting group-wide enthusiasm and support for menus adaptable to changing product availability, as well as the processing that can be required to prepare local products.

Enthusiasm and knowledge of hospital kitchen management is an institutional strength that can be fostered to support the participation of other, less experienced institutions in engaging

in the local food system. Creating networking opportunities to connect institutional chefs is one potential strategy to support problem solving and facilitation of greater use of local foods in hospital food service meals. Chef-to-chef collaborations in which institutional chefs can engage in dialogue to share information and problem solve may support institutional kitchens.

Information on how to more effectively balance the cost of local food ingredients with those of large distributors, successful partnerships between institutions and local producers, and tips for food preparation can all contribute to more successful integration of local foods into hospital food service meals. Although GPO contracts can restrict flexibility in working with local or other external food vendors, such collaborations may also support institutions in identifying creative ways to most effectively utilize the contracted 10 or 15% purchasing power allotted for external products, thereby sourcing as much local foods as possible.

3. Coordinated Producer-Hospital Communication: Enduring work relationships and partnerships between producers and champion leaders throughout the region are significant strengths to the farm-to-hospital movement. Solid relationships can serve to strengthen institutional buying commitment, thereby supporting producer capacity to meet growing demand. Established relationships can be used to promote greater communication and coordination between institutional and producer partners before the growing season begins each year. Producers can plan for crop management if they know what products food service management desires. Early communication promotes greater institutional satisfaction for available products and promotes guaranteed return for the producers. Therefore, a capacity building strategy is to develop formal communication processes between producers and partner institutions before the growing season. Early coordination can ensure that local producers can meet hospital food service needs and in turn, support institutional buying commitment of local food products.

Champion leaders and established working relationships are perceived as community strengths and can be used to build capacity for producer-hospital relationships. Based on these strong working relationships and shared interest of strengthening the local food system, a capacity building strategy is to develop binding partnership contracts. Formal contracts can ensure more solid buying commitments. Such contracts promote a degree of consistency in purchasing and in turn encourage greater commitment and resource allocation from producers to meet growing needs of institutional markets. Binding contracts integrates a more formal business component to the producer-hospital relationship, but may promote greater consistency and security for both partners and strengthen the overall working relationship.

Perception that Local is More Expensive:

High prices of local foods were identified as a significant barrier to building capacity for Montana's farm-to-institution efforts. Our study revealed that more than addressing particular challenges associated with working with an institution, a broader, systemic challenge impacts the ability to expand the farm-to-institution system. Commodity food prices were perceived as inaccurately reflecting actual costs of food. Without accounting for production and transportation costs, commodity foods prices appear incredibly competitive and affordable. This inaccurate portrayal of food costs was identified as a significant barrier to local producers trying to enter the institutional market. Small-scale producers with limited resources necessarily charge customers prices that accurately reflect input costs required for production. Consequently, prices of local foods are generally perceived as being significantly more expensive than foods sourced from large, corporatized distributors. As institutions often have limited resources, such a discrepancy

in price can make competing with these commodity products extremely challenging for local producers.

Economy of scale was identified as a considerable challenge to expanding farm-to-institution efforts. Economy of scale describes the manner in which the marginal cost of producing a particular product falls as larger quantities are made (Hamel, n.d.). Large-scale operations enable the use of techniques to increase productivity and further reduce manufacturing costs. Therefore, small, local businesses may struggle to compete with large companies able to mass produce products at a significantly lower price (Hamel, n.d.). The principles of economies of scale are reflected in interview data in which local products are more expensive than food items offered by large-scale distributors. Local producers may struggle to compete against large-scale distributors and hospitals may in turn struggle to afford such differences in price margin necessary to support local food systems.

As previously discussed, processing of local foods has been identified as a barrier to both producers and hospital food services in trying to establish and maintain a working relationship. Hospital food services may lack the infrastructure necessary to process local foods into components that can be used in menu options. Thus, the convenience and services of a large distributor is often appealing and more feasible than use of local foods that are not yet processed. Due to economy of scale, small producers often lack feasible options to process their own products in order to compete with services of large distributors. Processing capabilities are therefore often inaccessible or challenging to both producers and institutions, hindering any ability to increase the amounts of local foods being used in the hospital setting.

Limited demand and affordability by customers were also identified as barriers to hospitals in procuring and selling local food items. Differences in local and commodity food

prices were identified as a barrier for hospitals in selling food items with locally-sourced ingredients. A recognized concern of hospitals was to limit any potential cost burden that customers may endure as a result of ingredients that are more expensive. Demand for local products was also identified as a barrier to using more local foods in hospital meals. Local produce and other food products can be unfamiliar to hospital visitors. Additionally, shifting menu options to incorporate these different products can result in the elimination of other previously offered items. The removal of “comfort foods,” such as fried items, coupled with the introduction of unfamiliar foods can result in significant change in available meal options. A lack of enthusiasm for local products and receptiveness to these efforts and higher prices were perceived as creating dissatisfaction and frustration among customers, and was identified as sometimes negatively impacting the level of food item sales. Participants of our study perceived that a choice to procure and use local foods may be for a variety of reasons, but it most likely won’t be due to local being more cost effective. Demand and affordability of local foods are therefore important for successfully increasing the use of local foods in hospital food services. Furthermore, a lack of commitment to local products will likely hinder the ability to work through the challenge of higher prices and may impede on using local foods at an institutional level.

Suggested knowledge, skill and resources to address high, local food prices:

1. Education and Wellness Programs for Staff and Administration: Demand and lack of support for local products among hospital food service customers was identified as a barrier to using more local foods. Without staff and customer support, transitioning away from traditional foods such as fried items, and shifting to more local, whole food items will likely be met with more opposition or hesitation. Since a lack of support can hinder

receptiveness to foods that are different or perhaps slightly more expensive, advocacy efforts have been taking place within the two health care facilities. Such advocacy includes education through food item descriptions, recognition of local products, informational table tents on the benefits of supporting and consuming local, and staff wellness programs. Participants identified the health care setting as an enabler in advocating for local food products, as such a setting is naturally associated with health education. Current educational efforts and the inherent environment of the hospital setting can therefore be recognized as institutional strengths in working to develop further community support for purchasing and consuming locally-sourced food items.

Using inherent institutional strengths to expand staff-based wellness programs can build capacity for using locally sourced foods in hospital food service programs. Developing staff programs emphasizing preventative health and nutrition as preventative medicine may foster greater institutional knowledge of local food consumption and support capacity to address cost as a barrier. Such prevention based staff programs may help promote a healthy workforce and thereby model healthful choices for patients. Study participants identified concepts of such programs as being explored and developed within their workplace. For example, staff CSA programs are perceived as one way to significantly increase nutritional awareness and behaviors among staff and may be a beneficial component of a wellness program. Local and regional programs such as the Western Montana Grower's Cooperative have established CSA programs and therefore potential feasibility and accessibility to such a program already exists. Additionally, education and workshops for hospital staff at the administration level may help foster support at a higher,

managerial level. Support at a higher level in a hierarchical organization may help to more broadly influence farm-to-institution efforts among hospital staff.

2. Processing Facilities: The Mission Mountain Food Enterprise Center (MMFEC), a processing facility in north western Montana, has created accessibility for small-scale food producers to more feasibly process particular products. In creating opportunity for producers to process some of their products, access to the institutional market has expanded and has supported the farm-to-institution system. This processing facility has further expanded opportunities for producer-hospital relationships by providing the ability to use seconds (products otherwise wasted) and to prepare and freeze products, allowing for year-round sales of produce. Infrastructure supporting the processing of local foods enables local producers to more comparatively compete with the convenience of large distributors offering less expensive, pre-prepared commodity foods. Therefore, MMFEC is strongly viewed as a strength by both producers and hospitals in supporting the use of local foods in institutional food service programs.

A capacity building strategy might be expanding Mission Mountain Food Enterprise Center. Strengthening partnerships between MMFEC and institutions, as well as with producers, may help facilitate institutional procurement and use of local foods. For example, MMFEC has recently partnered with the WMGC and together have focused on bringing processed, local food items into some of Montana's public schools. This relationship has supported WMGC members by expanding the potential institutional markets for their products. Hospital interview participants identified an interest in becoming more familiar with the particular services of MMFEC in order to make better use

of the processing facility and further facilitate the use of local products in the institutional setting.

3. Assessment of Montana's Processing Infrastructure: Processing local foods was identified as a challenge by food producers and hospitals to working directly with one another. Two possible solutions to this challenge might exist. One, more processing facilities like MMFEC should be established throughout Montana for local producers to utilize before selling products to institutions. Two, processing infrastructure should be developed at the institutional level so that kitchen management at each institution has the ability to more efficiently process procured local food products on site. Therefore, another capacity building strategy addressing processing of local food products may be implementing a state-wide strategic planning process that assesses Montana's overall processing infrastructure. A formal assessment could provide baseline data on the food processing infrastructure and capacity of the state's institutions, such as schools, hospitals, and restaurants. This assessment could provide insight as to whether a focus should be placed more on increasing infrastructure capacity (particularly processing) for producers or for institutional food services. Capacity building strategies addressing resources may also occur across the socio-ecological spectrum of community, from individual skill development in local food preparation to infrastructural change at an institutional level. A strategic planning process at an organizational level may allow for infrastructural change within the hospital setting. It may further allow for a redistribution of time and management to more effectively address the procurement and preparation of locally-sourced foods. Identifying gaps within both hospital and producer capacity may provide a more holistic assessment and approach to supporting greater competition between locally-

sourced foods and the prices and convenience that are associated with commodity food distributors.

Perceived Lack of Availability:

A perceived lack of availability in local products was identified by hospitals as a barrier to increasing the amounts of local foods being used. However, our study found dissonance between the two sets of interviews on perceptions of availability. For example, hospital participants generally expressed concern around quantity and the ability of local producers to fill food service needs. Producer participants, however, responded to this concern in the context of market saturation rather than limited quantity. Market saturation was referenced in the context that both individuals and institutions committed to using local products have already accomplished this goal and have already established outlets for procuring local foods. Farmers' markets, natural food stores, and local-oriented restaurants were identified as already engaging in the local food movement. Therefore, untapped markets, such as conventional grocery stores and other institutions are more challenging to enter and establish direct working relationships with.

Market saturation poses a challenging dilemma for producers trying to establish direct working relationships with institutions. At this point, the needs of supportive markets (individuals and local-oriented restaurants), or "low hanging fruits," are being sufficiently satisfied and met by local producers. The dilemma now arises that Montana's local food production is beyond the scope of interest for these products. For example, participants identified farmers' markets as an outlet for local products that demonstrates market saturation. The number of small, local producers is so abundant that competition for business is increasing and farmers' markets are becoming a less profitable option.

Product availability was therefore perceived as being limited by demand rather than production capacity. A dilemma therefore arises in which producers aren't able to expand their level of production until demand increases. Yet conversely, institutional demand and use of local foods can't increase until levels of production expand.

Suggested knowledge, skills and resources to address lack of product availability:

1. Collaborative Problem Solving: Dissonance between interview groups suggests that opportunities exist for capacity building and support of direct producer-hospital relationships. Production of local products and food ingredients was identified as both a local and regional strength by participants. Therefore, local production can be considered a community strength and can be utilized in addressing some of the challenges associated with using more local foods at an institutional level. Market saturation strongly emerged as a barrier to the growth of local producers. However, a theme that was expressed just as strongly was a willingness and readiness to engage with institutions in addressing challenges so that greater quantities of products may be supplied. Challenges to direct producer-institution relationships are inevitable and therefore mutual dedication is necessary in finding solutions. Food producer study participants generally identified themselves as being receptive to beginning this process and felt the saying, "if there's a will, there's a way," reflected community sentiment. Along with this, modes of networking, such as medical conferences and hospital partnerships were identified as beneficial to developing institutional capacity to procure and use local foods.

A capacity building strategy may therefore be networking aimed at identifying and overcoming general misconceptions that local producers and institutions may have about one another. Creating more structured opportunities for conversations to take place in

which institutions and local producers are at the same table may be productive in working to break down some of the main misconceptions and engage in joint problem solving. A collaborative process may be supportive of a holistic, strategic assessment, creating opportunity for more productive use of time and resources by both food producers and institutions. Collaborative problem solving ensures that all invested stakeholders are at the table. Therefore, through joint ownership of the process and outcomes, more durable solutions can be generated and implemented in order to increase the amounts of local food being used in the hospitals (McKinney, 2010). Such a process will facilitate identification and resolution of misconceptions and challenges currently taking place between local food producers and institutional food services, and support forward momentum of mutually beneficial and successful producer-hospital relationships.

CONCLUSIONS

Limitations:

One limitation to this study was that collected information was limited and specific to the experiences of the individuals who participated in the interview process. Along with this, a limited participation rate equates to results that are 1) specific to Montana and 2) therefore not generalizable. Another limiting factor was that as a result of data being collected through interviews, participants may have felt compelled to give socially desirable answers to the interview questions. Finally, rather than full triangulation of emergent themes during the data analysis process, only two researchers established coding reliability and agreement.

Future Work:

This study identified community capacity dimensions relating to opportunities and challenges for using local foods in hospital food service meals. From this data, the study aimed to suggest capacity building strategies for addressing these opportunities and challenges in the context of supporting direct local producer-hospital working relationships. By exploring the perceptions of both hospital staff and local producers, an initial situational assessment was developed to describe the strengths and needs of Montana's farm-to-hospital system. This assessment could be built upon by exploring the particular local food initiatives taking place in other institutions. Other hospitals and schools throughout Montana were identified as role models and successful examples of farm-to-institution efforts in the state. Closer examination may contribute to greater understanding of capacity building strategies locally relevant to increasing the amount of local foods used in institutional food service programs throughout Montana.

Results from this study produced several related themes that would be worthy of future exploration and discussion. Multiple participants addressed the observation that while the use of local foods has increased in the health care cafeteria setting, these efforts haven't been applied to patient meals. Concern was expressed around this observation in that patients are logically in need of healing and re-growth. Therefore, nutritious and local foods should also be incorporated into these meals. This prevalent theme suggests that future work could explore the particular barriers pertaining to the use of local foods in patient meals compared to use in the cafeteria, as this seems to be a particular gap in local food efforts.

Participants identified untapped markets as a significant opportunity for strengthening the farm-to-institution system. A particularly prevalent observation was in regards to the extensive space for market development in conventional grocery stores. Market saturation was identified as a challenge to expanding business for local producers. However, participants recognized conventional grocery stores as having significant impact on developing the farm-to-institution movement, as large quantities of food quickly and naturally move through these outlets. In discussion around conventional grocery stores, participants perceived significant barriers to currently be in place, impeding on potential market entry. Thus, access to conventional grocery stores, and the particular barriers and capacity associated with this access should be explored in future studies.

Conclusion:

The main purpose of this study was to identify opportunities and barriers for local producers and hospitals to work together in order to use locally-sourced foods in food service meals. Through conducting interviews with both hospital staff and local producers, perceptions and attitudes around working with one another were more carefully explored and understood. Developing the farm-to-institution system in Montana is an extremely multi-dimensional and complex task. This study lays the groundwork of more comprehensive efforts to build capacity and offer insight to particular opportunities and challenges unique to Montana food and institutional systems. Efforts to connect producers and hospitals in dialogue may be most significant. Collaborative dialogue to overcome misconceptions and misinformation and to engage in joint problem solving may serve to most successfully strengthen Montana's farm-to-institution system and increase the amounts of locally-sourced foods being used in hospital food service programs.

Bibliography

- Alonso, A.D. and O'Neill, M. (2010). Small Hospitality Enterprises and Local Produce: a Case Study. *British Food Journal*, 112(11), 1175-1189.
- The Agape Center. (2010). Montana hospitals: Retrieved from <http://theagapecenter.com/Hospitals/Montana.htm>
- Azuma, A.M. and Fisher, A. (2001). *Healthy Farms, Healthy Kids: Evaluating the Barriers and Opportunities for Farm-to-School Programs*. Available at Community Food Security website: <http://www.foodsecurity.org>
- Bagdonis, J.M., Hinrichs, C.C. and Schafft, K.A. (2009). The Emergence and Framing of Farm-to-School Initiatives: Civic Engagement, Health, and Local Agriculture. *Agriculture and Human Values*, 26, 107-119.
- Bellows, B.C., Dufour, R. and Bachmann, J. (2003). Bringing Local Food to Local Institutions: a Resource Guide for Farm to School and Farm to Institution Programs. *National Sustainable Agriculture Information Service*. Retrieved from www.attra.NCAT.org
- Byker, C., Shanks, J., Misyak, S. and Serrano, E. (2012). Characterizing Farmers' Market Shoppers: a Literature Review. *Journal of Hunger and Environmental Nutrition*, 7, 38-52.
- Cassidy, A. and Patterson, B. (2008). The planner's role in the urban food system: The New Planner. Retrieved from <http://www.planning.org/thenewplanner/2008/spr/urbanfoodsystem.htm>
- Cohen, G. (2006). First, Do No Harm. *Designing the 21st Century Hospital: Environmental Leadership for Healthier Patients and Facilities*. The Center for Health Design, Health Care Without Harm, The Robert Wood Johnson Foundation.

Community Medical Center. (2011). Retrieved from <http://www.communitymed.org/>

Dauner, K.N., Lacaille, L.J., Schultz, J.F., Harvie, J., Klingner, J., Lacaille, R., and Branovan, M. (2011). Implementing Healthy and Sustainable Food Practices in a Hospital Cafeteria: a Qualitative Look at Processes, Barriers, and Facilitators of Implementation. *Journal of Hunger and Environmental Nutrition*, 6, 264-278.

DeMuth, S. (1993). Defining Community Supported Agriculture. *United States Department of Agriculture*, retrieved from <http://www.nal.usda.gov/afsic/pubs/csa/csadef.shtml>

Earnst, M. and Woods, T. (2014). *Grower Cooperatives (Co-ops)*. Retrieved from The University of Kentucky College of Agriculture, Food and Environment, Cooperative Extension from <http://www.uky.edu/Ag/CCD/marketing/co-op.pdf>

Economy of Scale. (2014). In *Investor Words* online. Retrieved from http://www.investorwords.com/1653/economy_of_scale.html

Elder, J.P., Lytle, L., Farm to Cafeteria Network. (2013). *The National Center for Appropriate Technology*. Retrieved from <http://farmtocafeteria.ncat.org/about/>

Fletcher Allen Health Care. (2013). Sustainable Food at Fletcher Allen. Retrieved from http://www.fletcherallen.org/about/environmental_leadership/sustainable_nutrition/

Food Service. (2014). In *The American Heritage Dictionary online*. Retrieved from <http://ahdictionary.com/word/search.html?q=food+service>

Francis, M. and Griffith, L. (2011). The Meaning and Design of Farmers' Markets as Public Space: an Issue-Based Case Study. *Landscape Journal*, 30, 2-11.

- Gillespie, A.H. and Smith, L.E. (2008). Food Decision-Making Framework: Connecting Sustainable Food Systems to Health and Well Being. *Journal of Hunger and Environmental Nutrition*, 3(2-3), 328-346.
- Glewwe, P. and Levin, M. (2005). *Presenting Simple Descriptive Statistics from Household Survey Data*. United Nations Publications.
- Grace Communications Foundation. (2013). Local and Regional Food Systems. Retrieved from <http://www.sustainabletable.org/254/local-regional-food-systems>
- Gregoire, M.B., Arendt, S.W. and Strohbehn, C. (2005). Iowa Producers' Perceived Benefits and Obstacles in Marketing to Local Restaurants and Institutional Foodservice Operations. *Journal of Extension*, 43(1), 34-42.
- Gregoire, M.B. and Strohbehn, C. (2002). Benefits and Obstacles to Purchasing Food From Local Growers and Producers. *The Journal of Child Nutrition and Management*, 26(1). Retrieved from <http://docs.schoolnutrition.org/newsroom/jcnm/02spring/gregoire/>
- Hamel, G. (n.d.). Problems of Small Scale Industries. *Small Business Chronicles*. Retrieved from <http://smallbusiness.chron.com/problems-small-scale-industries-18186.html>
- Hardesty, S.D. (2008). The Growing Role of Local Food Markets. *American Journal of Agricultural Economics*, 90(5), 1289-1295.
- Harvie, J., Leslie, M., and Shak, L. (2009). A New Health Care Prevention Agenda: Sustainable Food Procurement and Agricultural Policy. *Journal of Hunger and Environmental Nutrition*, 4, 409-429.

- Harvie, J. (2008). Menu of Change Healthy Food in Health Care: a 2008 Survey of Healthy Food in Health Care Pledge Hospitals. *Health Care Without Harm*. Retrieved from <http://www.noharm.org>
- Harvie, J. (2006). Redefining Health Food: an Ecological Health Approach to Food Production, Distribution and Procurement. *Designing the 21st Century Hospital: Environmental Leadership for Healthier Patients and Facilities* Conference. The Center for Health Design, Health Care Without Harm, The Robert Wood Johnson Foundation.
- Hawkes, C. (2006). Uneven Dietary Development: Linking the Policies and Processes of Globalization With the Nutrition Transition, Obesity, and Diet-Related Chronic Diseases. *Globalization and Health*, 2,4. doi:10.1186/1744-8603-2-4
- Health Care Supply Chain Association. (2012). Retrieved from <http://www.supplychainassociation.org/>
- Health Care Without Harm. (n.d.) *Healthy Food Pledge Signers*. Retrieved from <http://www.healthyfoodinhealthcare.org/signers.php>
- Healthy Food in Health Care Pledge. (2008). Retrieved from http://www.noharm.org/lib/downloads/food/Healthy_Food_in_Health_Care.pdf
- Horrigan, L., Lawrence R.S. & Walker, P. (2002). How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture. *Environmental Health Perspectives*, 110(5), 445-456.
- Izumi, B.T., Wright, D.W. and Hamm, M.W. (2010). Farm-to-School Programs: Exploring the Role of Regionally Based Food Distributors in Alternative Agrifood Networks. *Agricultural Human Values*, 27, 335-350.

- Kang, S. (2012). Perceptions of the Benefits and Challenges of Purchasing Local Foods in the Iowa Hotel Industry (Master's Thesis). Retrieved from <http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=3736&context=etd>
- Kloppenburger, J., Wubben, D. and Grunes, M. (2008). Linking the Land and the Lunchroom: Lessons from the Wisconsin Homegrown Lunch Project. *Journal of Hunger and Environmental Nutrition*, 3(4), 440-455.
- Kulick, M. (2005). Healthy Food, Healthy Hospitals, Healthy Hospitals: Stories of Health Care Leaders Bringing Fresher, Healthier Food Choices to Their Patients, Staff, and Community. *Institute for Agriculture and Trade Policy*: Minneapolis, Minnesota.
- Landers, T.F., Cohen, B., Wittum, T.F. & Larson, E.L. (2012). A Review of Antibiotic Use in Food Animals: Perspective, Policy and Potential. *Public Health Reports*, 127(1), 5-22.
- Landis, J.R and Koch, G.G. (1977) The Measurement of Observer Agreement for Categorical Data. *Biometrics*, 33, 159-174.
- Lyson, T.A. and Green, J. (1999). The Agricultural Marketscape: A Framework for Sustaining Agriculture and Communities in the Northeast. *Journal of Sustainable Agriculture*, 15(2-3), 133-150.
- Marshall, C. and Rossman, G.B. (1999). *Designing Qualitative Research* (3rd ed.). Sage Publications.
- Matson, P.A., Parton, W.J., Power, A.G. & Swift, M.J. (1997). Agricultural Intensification and Ecosystem Properties. *Science*, 277, 504-409.
- McKinney, M. (2010). *Benefits of and Need for Collaboration*. Missoula, MT: Center for Natural Resources and Environmental Policy.

- Moran, B. (2010). Defining 'Farmers Market': The Devil's in the Details. *Farmers Market Coalition*, Retrieved from <http://farmersmarketcoalition.org/defining-devil-in-the-details>
- Myslajek, L. (2011). A Sustainable, Localized Food Service Plan: Development Strategies for Lakewood Health System. The University of Minnesota, Minneapolis, Center for Urban and Regional Affairs. Retrieved from <http://www.extension.umn.edu/rsdp/community-and-local-food/local-food-policy/how-policy-can-affect-local-food/docs/sustainable-localized-food-service-plan.pdf>
- Nova Scotia Department of Agriculture. (2011). *Growing Demand: Local Food Procurement at Publicly Funded Institutions in Nova Scotia*. Province of Nova Scotia: Knight, A. and Chopra, H. Retrieved from <https://www.novascotia.ca/agri/marketing/research/growing-demand.pdf>
- O'Hara, S.O. and Stagl, S. (2001). Global Food Markets and Their Local Alternatives: a Socio-Ecological Economic Perspective. *Population and Environment*, 22(6), 533-554.
- O'Kane, G. (2011). What is the Real Cost of Our Food? Implications for the Environment, Society, and Public Health Nutrition. *Public Health Nutrition*, 15(2), 268-276.
- PAN North America. (n.d.) Industrial Agriculture: Retrieved from <http://www.panna.org/issues/food-agriculture/industrial-agriculture>
- Sallis, J.F., Young, D.R., Stecklers, A., Simons-Morton, D...Ribisls, K. (2007). A Description of the Social-Ecological Framework Used in the Trial of Activity for Adolescent Girls (TAAG). *Health Education Research*, 22(2), 155-165.
- Schettler, T. (2006). Toward an Ecological View of Health: an Imperative for the Twenty-First Century. *Designing the 21st Century Hospital: Environmental Leadership for*

- Healthier Patients and Facilities* Conference. The Center for Health Design, Health Care Without Harm, The Robert Wood Johnson Foundation.
- St. Patrick's Hospital. (2013). Retrieved from <http://montana.providence.org/hospitals/st-patrick/>
- Stephenson, G. and Lev, L. (2004). Common Support for Local Agriculture in Two Contrasting Oregon Communities. *Renewable Agriculture and Food Systems*, 19(4), 210-217.
- Strohbehn, C.H., and Gregoire, M.B. (2002). "Institutional and Commercial Food Service Buyers' Perceptions of Benefits and Obstacles to Purchase of Locally Grown and Processed Foods." Iowa State University, Leopold Center for Sustainable Agriculture, Ames, IA.
- Strohbehn, C.H. and Gregoire, M.B. (2003). Case Studies of Local Food Purchasing by Central Iowa Restaurants and Institutions. *Foodservice Research International*, 14, 53-64.
- Tilman, D. (1999). Global Environmental Impacts of Agricultural Expansion: The Need for Sustainable and Efficient Practices. *Proceedings of the National Academy of Sciences Colloquium*, 96:5995-6000.
- Treacy, A.O. (2008). Think Globally, Eat Locally. *Minnesota Medicine*, Retrieved from <http://www.minnesotamedicine.com/CurrentIssue/PulseEatSeptember2008/tabid/2674/Default.aspx#.UdrgFmKM4Xk.email>
- Ulin, P.R., Robinson, E.T. and Tolley, E.E. (2005). *Qualitative Methods in Public Health: A Field Guide for Applied Research*. San Francisco, CA: Jossey-Bass.

Vogt, R.A. and Kaiser, L.L. (2008). Still a Time to Act: A Review of Institutional Marketing of Regionally-Grown Food. *Agriculture and Human Values*, 25, 241-255.

Western Montana Growers Cooperative. (2013). *About*. Retrieved from <http://wmgcoop.com/about>

Wolf, M.M., Spittler, A. and Ahern, J. (2005). A Profile of Farmers' Market Consumers and the Perceived Advantages of Produce Sold at Farmers' Markets. *Journal of Food Distribution Research*, 36, 192-201.

Worley, S. and Strobbe, M. (2012). *Scaling Up: Perspectives from Growers and Buyers on Barriers and Benefits to Wholesale Marketing of Local Fruits and Vegetables*. Ames, Iowa: Leopold Center for Sustainable Agriculture. Retrieved April 18, 2014, from <https://www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2012-10-scaling-perspectives-growers-and-buyers-barriers-and-benefits-wholesale-marketing-local-fruits-and-v.pdf>

APPENDIX A
Demographic Survey

PARTICIPANT ID: _____

Survey

Demographic Questionnaire: *For the purpose of this survey, "local" food is any food product or ingredient produced in the state of Montana.*

1. Current Age:

- 18-24 45-54
- 25-34 55-64
- 35-44 65+

2. Gender:

- Female Male Other: _____

3. Ethnicity:

- Native American
- Hispanic/Latino
- Native Hawaiian/Pacific Islander
- Asian
- White, non Hispanic
- African American
- Other: _____

4. Years of school completed?

- Less than high school
- High school diploma/GED
- Some college/Associate degree
- College degree
- Graduate degree
- Doctorate degree

5. What is the title of your current occupation? _____

6. What is the range of your yearly income that supports you?

- \$ 00,000-\$20,000
- \$20,000-\$40,000
- \$40,000-\$60,000
- \$60,000-above

7. Local food is healthier than foods that are not grown locally.
 ALWAYS
 SOMETIMES
 NEVER
8. It is important to incorporate local foods into your diet.
 STRONGLY AGREE
 AGREE
 UNSURE
 DISAGREE
 STRONGLY DISAGREE
9. I consume local foods at least once a week.
 AGREE
 DISAGREE
 UNSURE
10. When purchasing local foods or products, I purchase them from...(check all that apply)
 I do not ever purchase local foods or products
 Farmers' Market
 Food co-op
 Community supported agriculture program (CSA)
 Grocery store
Other _____

APPENDIX B
Interview Guide: Hospital Staff

Moderator Guide

Local Food in Hospital Food Service Programs

Hospital Staff

Moderator Guide

MODERATOR GUIDE - INTERVIEWS

An exploration of currently perceived barriers and enhancers by two local hospitals to incorporating more locally-sourced ingredients in food service programs.

INTERVIEWERS:

Allie Perline

LOCATION:

Missoula, Montana

SCHEDULE:

Six to ten, 30-60 minute individual interviews will be conducted in each of the two primary hospitals of Missoula, MT, St. Patrick hospital and Community Health Medical Center. Interviews will be held at various times of the day, depending on the participants' schedule.

CONTENT AND ORGANIZATION:

Participant sign-In: 10 minutes

- Participant arrives at pre-determined location
- Informed consent is given, read and signed

INTRODUCTION:

- Explain that written text may be followed closely throughout the interview in order to ensure that all topics are covered
- Ask if he/she has questions regarding informed consent or any other topic pertaining to the interview

WELCOME: 5 minutes

Welcome. My name is [XXX] and I will be conducting the interview today/this evening. This project is exploring the strengths and weaknesses currently present in increasing the amount of locally-sourced foods used in hospital food service programs. You may know of projects that are already taking place and you may also be aware of reasons that incorporating more locally-sourced ingredients into meals is difficult. This study is trying to understand what kinds of changes or programs might be helpful in increasing the amount of local food products used in food service programs and I need your help to do this.

Honesty/no wrong answers:

It's important that I get your honest opinions about the topics discussed during this session. Remember that there are no wrong answers to the questions and that I'm interested in your experience, knowledge, and thoughts about the topic.

Speak clearly:

To make sure I understand your comments, I am audio taping the session. It will help me understand the tape if your voice is loud and clear. Please remember to use your name so the study can protect your privacy.

Confidentiality:

Because this is recorded, I want to remind you that this is protected research and everything you say here will be kept private. If we happen to cross paths beyond this interview I will only acknowledge you if you initiate it. Please also respect others' privacy by not discussing the content of the interview outside this interview.

INTERVIEW QUESTIONS

Local Foods in Hospital Meals 30-60 minutes

Let me first say that if you feel any of these questions aren't appropriate or you feel uncomfortable responding, please let me know and feel free not to answer. I would like to understand your experiences and thoughts on the use of locally-sourced foods in the food service program and meals here.

What does "locally sourced foods" mean to you?

What kind of a role, if any, do you feel that locally sourced foods should have in human diet and health?

How do you feel that locally sourced foods currently fit into our country's health care system and broader model of western medicine?

PROBE: How do you feel about this current role that local foods play in health care? Would you change this role in any way?

That you're aware of, are locally-sourced ingredients or food products used to any extent here in food service meals?

PROBE: How is this being done? What does this look like?

PROBE: What kind of impact, if any, do you think that incorporating locally-sourced foods in meals are having on people here in this hospital? (Staff, patients, visitors).

PROBE: Can you think of any particular examples or comments that you have witnessed by patients or other staff in response to the facility's efforts of incorporating locally sourced foods in meals?

Have you, or someone you know, had an experience in this hospital working with any local food producers or distributors? What was this experience like?

PROBE: Were there any aspects that worked particularly well? What did these things look like?

PROBE: Were there any challenges that you can think of, that were associated with this experience?

To what extent, if at all, do you feel that there is any interest in modifying food service meals or the amounts of local ingredients being used?

PROBE: If there was an interest in increasing the amount of local ingredients in food service meals, overall, how easy or difficult do you think it would be to do this?

PROBE: Can you think of any specific examples in which challenges were discovered in attempting to use local food ingredients, beyond the scope of interacting with local producers or distributors?

PROBE: Do you think that any of these challenges could be reduced or resolved in the near future? Why or why not; what would this look like?

PROBE: Overall, what kind of things, if any, do you think would make it easier to increase the amount of locally-sourced ingredients being used in hospital meals? (Funding, staff position, general interest, access to particular information, etc.)

What kind of a role, if any, do you feel that local food producers and distributors have in these potential changes? Are there any changes on that end that you feel might help you in accessing local foods?

Closing 5 minutes

Is there anything else that you would like to tell me about in relation to your thoughts on local foods or their use in the health care setting? Do you have any other thoughts on the use of local foods in this particular facility? Is there anything else that you feel is important for us to know?

Facilitator:

Date:

Summary of Interview or Focus Group

Take a few minutes to write down any noticeable themes that arose from the conversations on the following topics:

Major themes and thoughts:

APPENDIX C

Interview Guide: Local and Regional Food Producers and Distributors

Moderator Guide

Local Food in Hospital Food Service Programs

Local and Regional Food Producers & Distributors

Moderator Guide

MODERATOR GUIDE - INTERVIEWS

An exploration of perceived barriers and enhancers by regional food producers and distributors to working with institutions and building the local food system.

INTERVIEWERS:

Allie Perline

LOCATION:

Missoula, Montana

SCHEDULE:

Six to ten, 30-60 minute individual interviews will be conducted with regional food producers and distributors in the Missoula, MT region. Interviews will be held at various times of the day, depending on the participants' schedule.

CONTENT AND ORGANIZATION:

Participant sign-In: 10 minutes

- Participant arrives at pre-determined location
- Informed consent is given, read and signed

INTRODUCTION:

- Explain that written text may be followed closely throughout the interview in order to ensure that all topics are covered
- Ask if he/she has questions regarding informed consent or any other topic pertaining to the interview

WELCOME: 5 minutes

Welcome. My name is [XXX] and I will be conducting the interview today/this evening. This project is exploring the strengths and weaknesses currently present in increasing the amount of locally-sourced foods used in hospital food service programs. You may know of projects that are already taking place and you may also be aware of reasons that incorporating more locally-sourced ingredients into meals is difficult. This study is trying to understand what kinds of changes or programs might be helpful in increasing the amount of local food products used in food service programs and I need your help to do this.

Honesty/no wrong answers:

It's important that I get your honest opinions about the topics discussed during this session. Remember that there are no wrong answers to the questions and that I'm interested in your experience, knowledge, and thoughts about the topic.

Speak clearly:

To make sure I understand your comments, I am audio taping the session. It will help me understand the tape if your voice is loud and clear. Please remember to use your name so the study can protect your privacy.

Confidentiality:

Because this is recorded, I want to remind you that this is protected research and everything you say here will be kept private. If we happen to cross paths beyond this interview I will only acknowledge you if you initiate it. Please also respect others' privacy by not discussing the content of the interview outside this interview.

INTERVIEW QUESTIONS

Local Foods in Institutions 30-60 minutes

Let me first say that if you feel any of these questions aren't appropriate or you feel uncomfortable responding, please let me know and feel free not to answer. I would like to understand your experiences and thoughts on the use of locally-sourced foods in the food service program and meals here.

What does "locally sourced foods" mean to you?

What kind of a role, if any, do you feel that locally-sourced foods should have in human diet?

Can you tell me a bit about your work here and the processes involved the particular work being done here?

What is your impression, if any, of the general relationships between local producers and distributors with larger institutions in Missoula?

PROBE: What has your personal experience or impressions been of working with institutions to distribute your products?

PROBE: Can you describe an experience in which you have, or tried to have, a working relationship with an institution?

PROBE: What does/did this look like? Can you describe the process involved in establishing a relationship and contract with the institution?

What kind of things would, or currently does, make such a relationship easy to support?

PROBE: Can you think of any particular examples in which things have, or do, work well or smoothly when doing business with a larger institution?

What kind of things would, or currently does, make such a relationship difficult to support?

PROBE: Can you think of any particular examples in which you have faced challenges in working with a larger institution?

Do you think there is/could be any kind of interest among other local food producers or distributors in working with local institutions, or working with more local institutions?

PROBE: Do you think there is any kind of interest among other local food producers or distributors in working with either of the two hospitals specifically?

What, if any, kind of changes or resources would be needed or helpful in making a partnership with one of the hospitals or another institution more accessible or feasible?

PROBE: What kind of a role, if any, do you feel that the institutions have in these potential changes? Is there anything that could be done to make the development of relationships with institutions easier for you?

Closing 5 minutes

Is there anything else that you would like to tell us about in relation to your thoughts on working with institutions? Do you have any other thoughts on specifically working with the hospitals? Is there anything else that you feel is important for me to know?

Facilitator:

Date:

Summary of Interview or Focus Group

Take a few minutes to write down any noticeable themes that arose from the conversations on the following topics:

Major themes and thoughts:

APPENDIX D
Dissemination Materials

SUGGESTIONS TO STRENGTHEN HOSPITAL-PRODUCER RELATIONSHIPS AND INCREASE THE AMOUNT OF LOCAL FOODS USED IN HOSPITAL FOOD SERVICE PROGRAMS

Hospitals have particularly become engaged in the farm-to-institution movement over the past decade. However, farm-to-hospital efforts are still new and the particular factors impacting the use of locally-sourced foods within the hospital setting are still relatively unexplored. The purpose of this study was therefore to explore the current opportunities and challenges to increasing the amounts of locally-sourced foods used in hospital food service programs in Missoula, Montana.

A qualitative research approach was used in this study by conducting in-depth interviews with both people involved in the hospital sector and in the local food production sector. Interviews with both sectors provided more comprehensive insight into the challenges and opportunities that hospitals and local food producers perceive in working together by addressing the following questions:

- a) How do the two hospitals perceive local food purchasing? How do those perceptions, and their associated individual, institutional, and policy based factors, create barriers and opportunities for hospitals to purchase locally grown foods?
- b) How do local and regional food producers and distributors perceive selling to hospitals? How do those perceptions, and their associated individual, institutional, and policy based factors, create barriers and opportunities for food producers to sell their products to hospitals?

Results from this project identified locally relevant suggestions for strengthening producer-hospital relationships and increasing the amounts of local foods used in hospital food service programs. This handout was created to inform local food producers and hospitals of potential changes and challenges to be addressed to improve direct working relationships and increase the amounts of local foods being used in hospital food services. Below are three broad barriers that were identified as significantly affecting the ability of hospitals to procure and use locally-sourced ingredients:

1. Buying commitment:

- a. A lack of consistency in institutional buying commitment was identified as a significant obstacle to building and expanding Montana's farm-to-hospital efforts.
- b. Suggested knowledge, skills, or resources to address buying commitment:
 - i. The Western Montana Grower's Cooperative was identified as a community strength. It offers opportunities for capacity building for direct producer-hospital relationships based on the benefits associated with an aggregated food system model. Such benefits more effectively compete with the services and

convenience offered by large distributors. A capacity building strategy based on this resource could be to more fully develop the aggregated food model to improve capacity, particularly in the eastern region of the state.

- ii. Based on the identified strength of passionate leaders within the two hospitals, education and training workshops for kitchen staff may promote group-wide enthusiasm and support for flexible menus and processing needed to prepare local foods.
- iii. Enduring work relationships and partnerships between producers and champion leaders was identified as a significant strength. These relationships can support greater communication and coordination between hospital and producer partners before the growing season begins each year to promote satisfaction for the hospital and guaranteed return for the producer. More formal and binding contracts may also promote greater consistency and security for both partners and strengthen the overall working relationship.

2. Perception that local is more expensive:

- a. Commodity food prices were identified by producers as inaccurately reflecting actual costs of food. Small-scale producers often have limited resources and need to charge prices that accurately reflect input costs required for production. As institutions often have limited resources, such a discrepancy in price can make competing with these commodity products extremely challenging for local producers.
- b. Suggested knowledge, skills, or resources to address cost:
 - i. Current educational efforts and the inherent learning and healing environment of the hospital setting were identified as strengths within the hospitals. Staff programs emphasizing preventative health and nutrition as preventative medicine may 1) foster greater institutional knowledge of local food consumption, 2) support capacity to address cost as a barrier, and 3) promote a healthy workforce and healthful food choice modeling to patients. Trainings for administrative staff may also help encourage support among hospital staff and influence use of local foods at a policy level.
 - ii. The processing facility Mission Mountain Food Enterprise Center (MMFEC) was identified as enabling local producers to more comparatively compete with the convenience of large distributors. Therefore, strengthening partnerships between MMFEC, the hospitals, other institutions, as well as with producers, may help facilitate institutional procurement and use of local foods.
 - iii. A state-wide strategic planning process to assess Montana's overall processing infrastructure could provide baseline data

on the food processing infrastructure and capacity of both local producers and the state's institutions, such as schools, hospitals, and restaurants. A strategic planning process at an organizational level may also support infrastructural change within the hospital setting by allowing for a redistribution of time and management for more effective procurement and preparation of locally-sourced foods.

3. Perceived lack of product availability:

- a. A significant concern identified by hospital participants was a lack of product availability and ability of local producers to fill food service needs. Producer participants, however, addressed this concern in the context of market saturation rather than limited quantity. Producers perceived that Montana's local food production is beyond the scope of interest for these products and restricts competition and growth among local, small-scale producers. Product availability was therefore perceived as being limited by demand rather than production capacity.
 - i. Local producers strongly expressed a willingness and readiness to engage with hospitals and other institutions in addressing challenges so that greater quantities of products may be supplied.
 - ii. Networking, such as medical conferences and hospital partnerships, were identified by the hospitals as beneficial to developing institutional capacity to procure and use local foods.
- b. Suggested knowledge, skills, or resources to address the misconception of inadequate food availability:
 - i. Creating structured opportunities for conversations to take place in which institutions and local producers are at the same table may be beneficial. Such dialogue can help to identify and resolve some of the main misconceptions occurring between the two sectors and allow for joint problem solving. A collaborative process may be supportive of a holistic, strategic assessment, creating opportunity for more productive use of time and resources by both food producers and hospitals.

APPENDIX E
IRB Forms

Interview Participants

You are invited to participate in a research project exploring challenges and opportunities to increasing the amounts of locally-sourced foods being used in hospital food services. This interview should take about 1 hour. Participation is voluntary and individual responses will be kept confidential. I want to be sure to document your opinions accurately. To do that, your responses will be recorded. Later on, the audio recording will be transcribed to make sure that your main ideas have been captured accurately. At the conclusion of the project, responses from all participants will be summarized and then reported back to the Department of Health and Human Performance of the University of Montana, as well as to any interested participants from either of the two hospitals or from the local food production sector. In reporting the findings, I will not identify the names of those interviewed. In addition to the interview, you will be asked to complete a short survey before we begin the interview session. Your responses on the survey will be kept confidential and are anonymous.

You have the option not to respond to any questions that you choose, as well as the option to end the interview at any time. Taking part in this interview will be interpreted as your informed consent to participate and that you affirm that you are at least 18 years of age.

If you have any questions about the research, please contact the Principal Investigator, Allie Perline, via email at allison.perline@umontana.edu or (802) 233-4351. If you have any questions regarding your rights as a research subject, contact the UM Institutional Review Board (IRB) at 406-243-6672.

Project Purpose

In the 1970's, globalization resulted in a shift towards mechanized, mass-production of food by large scale corporations. These changes in food production and distribution have contributed to a disconnect between communities and their food, which plays a vital role in a community's culture and well-being. This sense of disconnect has resulted in a nation-wide movement that's working to reestablish a connection between communities and the food production and distribution process. Programs such as farmers' markets, food cooperatives and community supported agriculture are all being used to strengthen partnerships between food producers and consumers.

Farm-to-institution programs are another example of ways in which more direct relationships can be built between producers and consumers. These programs, however, are still fairly new. Farm-to-hospital programs are particularly new and therefore, little assessment or evaluation has been conducted for these programs. Little is known about the challenges and opportunities hospitals and local food producers and distributors experience in working together to bring more locally-sourced foods into food service meals.

Therefore, the purpose of this study is to explore the current opportunities and challenges to increasing the amounts of locally-sourced foods used in the hospital food service programs in Missoula, Montana. These challenges and opportunities will be explored through conducting interviews with hospital staff, local producers and distributors. The goal of this project is to identify and develop relevant resources and appropriate "next steps" that may support the use of locally-sourced foods in Missoula hospitals.