

Post-Discharge Meal Distribution Programs

Bethesda NEWtrition and Wellness Solutions

Developed for the Maryland Department of Aging

MAY 2019

Grant funds from the Administration for Community Living (ACL), Grant Number 90INNU0002-02-01 and the Maryland Department of Aging assisted in the development in this material. Its contents are solely the responsibility of the authors and do not necessarily represent the official position or policies of the ACL or Department.

Table of Contents

Introduction	2
Background	2
About the Maryland Discharge Meal Program (MDMP)	2
Purpose of this Report	3
Literature & Program Review	3
Review of Post-Discharge Meal Programs, Literature, Insurance Company Initiatives, and Other Similar Programs.....	3
Impact on the MDMP	13
Meal Packages.....	13
Educational Materials	13
Target Population	14
Other Impacts & Considerations.....	14
Continual Network Support and Feedback.....	15
Slack Network	15
Quarterly Phone Meetings.....	15
Conclusion and Acknowledgements.....	15
References.....	16
Appendix A: Sample Menus.....	20
Appendix B: Sample Educational Material.....	22
Appendix C: Sample Workflow	23
Appendix D: Sample Referral Form	24

Introduction

Background

Seniors leaving the hospital at risk for malnutrition have a higher rate of readmission and death. Some studies estimate that as many as 30% of hospitalized patients may be malnourished at the time of their admission (Sharma et al., 2017) and as many as 49% of older adults are malnourished after discharge. (Buys et al., 2017) A recent study conducted by Sharma et al has shown that impaired nutrition status upon discharge can increase the incidence of readmission to the hospital both in the short-term (0-7 days) and the longer-term (8-180 days) post discharge. (Sharma et al., 2017)

As the US population gets increasingly older, addressing senior malnutrition is becoming more of a priority. The number of Americans aged 65 and older is expected to almost double by 2050 to 88 million (“World’s older population grows dramatically | National Institutes of Health (NIH),” n.d.) and those 85 and older are projected to more than double by 2040 to 14.6 million. (Administration on Aging, 2017)

About the Maryland Discharge Meal Program (MDMP)

The Maryland Discharge Meal Program (MDMP) is part of an initiative put forward by the Maryland Department of Aging (MDoA). The program is funded by an Innovations in Nutrition Programs and Services grant from the Federal Administration for Community Living. The goal of the grant project is: *to transform the Maryland Department of Aging’s Senior Nutrition Program (SNP) by using the epidemic of older adult malnutrition as the catalyst to introduce new evidence-based practices, cost-cutting measures, meal products, and service delivery methods that will forge new health care linkages and expand services to older adults in the community.* (language from grant application)

The MDMP is a pilot that will provide shelf-stable, medically-tailored meals to 200 seniors being discharged from four hospitals in Maryland. The program partnered with Maryland Food Bank, which was responsible for purchasing, packaging, and distributing meal packages to the pilot hospitals. Hospital staff will then distribute the meal packages to patients leaving the hospital who meet the criteria for the program. Potential participants will be screened for eligibility based on their age, medical condition(s), and risk for malnutrition upon leaving the hospital. The pilot program will particularly focus on addressing malnutrition risk associated with chronic conditions that have been identified as having high readmission rates for these particular hospitals.

A participant will receive one of two medically-tailored meal packages based on their medical needs. For this pilot, two types of meal packages are included. The Carb-Controlled, Heart-Healthy (CC/HH) meal package is low in sodium, meets the DRI for macronutrients (protein, fat, and carbohydrates), and evenly distributes carbohydrates between meals and snacks. The CC/HH packages are intended to be used for participants with diabetes mellitus, hypertension, and/or congestive heart failure. The Enhanced Healing (EH) meal package is higher in protein and calories and has no restrictions on sodium, carbohydrates or fat. The EH package is intended to be used for participants who have higher energy needs due to their medical condition, such as chronic obstructive pulmonary disease. Table I, below, contains a more specific nutritional summary.

Table I: Nutritional summary of MDMP meal packages

Meal package type	Nutrition data (ranges)				
	<i>Calories</i>	<i>Carbohydrates</i>	<i>Fat</i>	<i>Protein</i>	<i>Sodium</i>
Carb-Controlled, Heart-Healthy (CC/HH)	1500 – 1700 per day	45-55% of total calories per day <ul style="list-style-type: none"> • 190 – 220 grams per day • 45 – 70 grams per meal • 15 – 25 grams per snack 	25-33% of total calories per day	18% - 20% of total calories per day	Under 2,000 mg per day
Enhanced Healing (EH)	1900 – 2500 per day	No restrictions	No restrictions	Over 100 grams per day	No restrictions

Purpose of this Report

With increased awareness of the impact of malnutrition on older adults, several initiatives to address this area of concern have been underway both in the US and abroad. Meal distribution programs similar to the MDMP have provided insight into processes, ideas, and potential collaborations that have been tried—both successfully and unsuccessfully—in the past. Takeaways from these programs informed the development of the MDMP. A review of relevant literature and similar programs/initiatives and their takeaways are profiled in the following pages. For each program reviewed, this report includes a compilation of costs and distribution methodology and what each program may do to ensure meals are culturally appropriate, person-centered, or medically-tailored.

Literature & Program Review

Community and government programs have taken initiatives to tackle senior malnutrition using innovative care models and nutrition programs. Meals on Wheels America (“Meals on Wheels America,” n.d.) is one program that has been delivering meals to people’s homes for generations, however newer local initiatives are also underway. Table II, below, is a review of some of the programs that have informed the MDMP initiative.

Review of Post-Discharge Meal Programs, Literature, Insurance Company Initiatives, and Other Similar Programs

The MDMP is unique in that it targets *all* seniors who have nutritional risk regardless of socioeconomic status. Several programs in the US provide meals specifically for low-income individuals, such as home delivered meals provided through Medicaid or the Commodity Supplemental Food Program (CSFP) (“Commodity Supplemental Food Program (CSFP) | Food and Nutrition Service,” n.d.). Additional programs serve older adults of any income but target those with economic or social needs, including the Older American’s Act congregate and home delivered meal programs (Administration for Community Living & Administration on Aging, 2014). While there is clearly a need to specifically address low-income seniors, malnutrition risk for seniors impacts all socioeconomic levels and therefore the MDMP does not have an income criteria for inclusion..

Programs reviewed here have a variety of goals and objectives, all centered around addressing high hospital admission and readmission rates, similar to the goals of the MDMP. For example, the Food is Medicine Coalition of California (CalFIMC) is specifically targeting adults suffering from congestive heart failure who they determined are at highest risk of hospital readmission and worsening health outcomes.

(Trust & Food, 2017) The Philadelphia MANNA project is targeting adults with AIDS or other chronic illness that puts them at high nutritional risk. And Flavor Harvest @Home provides their meal services for community members or recently discharged patients who have specific chronic conditions. Other programs only have an age requirement for eligibility, not subject to medical condition.

The types of meals offered by these programs vary widely, and some programs offer a variety of different meal types depending on the need of the participant. The MDMP meals are unique in that they are entirely shelf-stable. Only a few other programs have focused specifically on shelf-stable meals. One such program is the Metropolitan Interfaith Association (MIFA) No Hungry Senior program, which provided 7 shelf-stable meals to seniors who were deemed capable of light meal preparation. Maintaining Active Citizens' Maryland Malnutrition Model (MDMM) offers shelf-stable emergency food bags and shelf-stable snack bags.

Table II: Review of programs and literature similar to MDMP	
<i>Food Is Medicine Coalition of California (CalFIMC)</i>	
Overview	Coalition of meal providers in California; first multi-county and multi-organization study of this kind in the US; members include: Ceres Community Project, Food for Thought, The Health Trust, Mama's Kitchen, Project Angel Food, and Project Open Hand.
Goals	To reduce hospital and emergency department 30-day and 90-day readmissions, to show the cost-effectiveness of including medically-tailored meals as part of Medi-Cal covered benefits, and to inform California policy.
Funding Source(s)	Funded by Senate Bill 97 passed in June of 2017, approved by Governor Jerry Brown and the California Legislature that provides \$6 million for a 3-year project period.
Target Population	Medi-Cal insurance beneficiaries who have a diagnosis of congestive heart failure (CHF) and have been discharged from an inpatient stay (at a hospital, emergency department or skilled nursing facility) resulting from exacerbation of CHF. Approximately 1,000 patients to be included. Patients need to be able to refrigerate and re-heat foods.
Meal Types	Medically-tailored meals approved by a Registered Dietitian Nutritionist (RDN) that follow evidence-based practice guidelines. Meals are recommended based on a nutritional assessment or healthcare provider recommendations. 3 meals per day are provided for 12 weeks. Multi-organization and multi-county project—each of the organizations is familiar with the needs and cultural preferences of their target population.
Outcomes	The Cal FIMC is an ongoing project (began in 2018), so outcomes are not available yet. Outcomes will be measured using data collected from Medi-Cal utilization and claims data. Outcomes include changes in hemoglobin A1C, health care utilization (ex: emergency department visits), skilled nursing use, readmissions, overall costs of care, and other measures.
Costs	Costs range, for example Mama's Kitchen was \$2.92 per meal.
Distribution Methodology	The multi-centered approach allows for a wide distribution of services to multiple counties in California. This project specifically works with Medi-Cal recipients, but is intended to stand as an example that other projects can imitate.
Sources	(Food et al., n.d.), (<i>Medi-Cal Medically Tailored Meal Pilot Project</i> , 1996), (Medicine, n.d.), (Food is Medicine Coalition (FIMC), 2018), (<i>Free / Medi-Cal Covered Medically Tailored Meals and Medical Nutrition Therapy for Discharged CHF Patients Scope of Intervention How to Refer</i> , n.d.)
<i>MANNA (Philadelphia)</i>	
Overview	MANNA began as a church-affiliated meal delivery program for Philadelphia residents with AIDS. MANNA expanded its services to anyone at nutritional risk due to critical illness in 2006. The program includes medically-tailored, in-house cooked meals and nutritional counselling.
Goals	Providing nourishment to critically ill neighbors.
Funding Source(s)	MANNA is a non-profit organization funded by donations from individuals, foundations and corporations, special events, and insurance coverage for some services.
Target Population	Residents of Philadelphia suffering from AIDS and other critical illness at risk for undernutrition and isolation. "MANNA clients must currently be battling or in care for a serious illness and, due to that illness, are at acute nutritional risk. Some nutrition indicators include: <ul style="list-style-type: none"> Recent unintentional weight loss

	<ul style="list-style-type: none"> • Recent, extended hospitalization • Start of new medical treatment (ex. chemotherapy, radiation, or hemodialysis) • Recovery from surgery • Wound care” (“Apply for MANNA Services - MANNA,” n.d.-a) (Apply for MANNA Services, n.d.)
Meal Types	Fully-prepared, frozen meals, delivered once a week: 7 breakfasts, 7 lunches, 7 dinners, desserts, and fresh fruit. Meals are high in protein, and moderate in carbohydrate, sodium and fat. Offers 11 different dietary modifications, including kidney friendly (low potassium low phosphorous, low sodium), diabetic/heart healthy (carbohydrate and sodium controlled), low lactose, GI friendly (low fiber, mild spice), no pork, no beef, no seafood, mechanical soft, pureed, high protein/high calorie, and children’s menu. Adaptations for personal or religious requirements. Can combine up to 3 modifications.
Outcomes	MANNA patients who received medically-tailored meals and medical nutrition therapy (MNT) experienced 50% fewer hospital admissions, were 23% more likely to be discharged to their homes rather than another facility, and had 28% lower monthly health care costs.
Costs	~\$4.40 per meal. For the 2017 fiscal year MANNA spent \$4,390,043 on meals and services. In their IRS Form 990, MANNA reported serving 995,270 meals in FY 2017. This comes to about \$4.40 per meal.
Distribution Methodology	Meals are provided for the greater Philadelphia area, participants are referred to the program.
Sources	(“Apply for MANNA Services - MANNA,” n.d.-b), (McCarron, 2017), (Gurvey et al., 2013), (Daugherty, Hoskins-Brown, & Laverty, n.d.), (MANNA, 2017)

Southern Maine Agency on Aging (SMAA) – Simply Delivered Meals Pilot Study

Overview	This agency is focused on improving social determinants of health by providing corresponding services and support. SMAA conducted a 2-year pilot of home delivered meals with 622 patients at high risk of readmission called “Simply Delivered Meals” in affiliation with Maine Medical Center.
Goals	Reducing 30-day readmission rates post-acute care. Improving emergency department usage and hospital admission rates.
Funding Source(s)	Hospital partners and grant funding.
Target Population	Elderly and Medicare patients (for pilot study).
Meal Types	Meals are frozen, prepared and no bread or milk is given. No information indicates that meals were tailored to be culturally appropriate beyond the different varieties of meals (i.e. vegetarian, gluten-free). Meals were given based on indicated preferences and diagnosis. Meals were specialized (e.g. vegetarian, pureed, regular, gluten free, low sodium, diabetic, renal, other/allergies) and could be packaged to meet multiple needs.
Outcomes	The 2-year pilot conducted at SMAA demonstrated a 387% return on investment, and a 2-point reduction in admission rates. The pilot provided a minimum of 7 meals, with the option to join Meals on Wheels at the end of the 7-day period.
Costs	~\$7 per meal. For the pilot study, the costs of providing 7 meals to 622 patients was \$43,530.
Distribution Methodology	The pilot was limited to hospital patients being discharged from Maine Medical Center.
Sources	(Martin, Connelly, Parsons, & Blackstone, 2018b), (Martin, Connelly, Parsons, & Blackstone, 2018a), (“Order Simply Delivered Meals,” n.d.), (“Southern Maine Agency on Aging,” n.d.), (“SMAA/MMC Simply Delivered Meals (SDM) Pilot,” n.d.), (Braveman, n.d.)

Flavor Harvest @Home

Overview	This project was an extension of an existing intervention at Lee Health in Southwest Florida into the primary care setting. Dietitians were trained to identify malnutrition risk in a primary care setting and patients who were at-risk received 4 weeks of medically-tailored meals along with a clinical dietetic consultation.
Goals	Improvement in long-term health status (reduced hospital length of stay, lower readmission rates, improved reimbursement opportunities, reduced operational costs) and quicker recovery for recently discharged patients. Improved clinical status was indicated by measures such as weight gain, grip strength, and functional status.
Funding Source(s)	Grants from Bank of America and The Allen Foundation funded the meals. Funding was for 2 years and supported 60 patients.
Target Population	Patients being discharged from Cape Coral Hospital and Gulf Coast Medical Center that were identified as at-risk for malnutrition. Specifically targeting frail elderly patients with chronic conditions (especially congestive heart failure, chronic obstructive pulmonary disease, acute myocardial infarction, or pneumonia).

Meal Types	Meal options were individualized and approved by a RDN based on the patient’s medical condition. Meals were provided for a 7-day period and included 3 meals per day and snacks. Meals were a mix of fresh produce, shelf-stable items and frozen prepared meals.
Outcomes	Patients participating in the program were found to have a reduced length of stay in the hospital, improved fluid status and strength, and reduced readmission rates.
Costs	~\$10 per meal. The program estimated that meals would cost an average of \$840 per person for 4 weeks. Based on 3 meals per day for 28 days, the cost came to about \$10 per meal.
Distribution Methodology	Patients eligible for this program were identified from two area hospitals (Cape Coral Hospital and Gulf Coast Medical Center) using the Flavor Harvest Assessment Screening Tool (FHAAT) and a physical exam to identify malnutrition risk. After discharge, Flavor Harvest @Home coordinated the home delivery of meals, using their existing vehicle delivery structure.
Sources	(“Flavor Harvest@HOME - AARP Foundation,” n.d.), (<i>Flavor-Harvest-at-HOME.pdf</i> , n.d.), (“Lee Health – Flavor Harvest@Home AHA,” n.d.)

Maintaining Active Citizens Maryland’s Malnutrition Model (MDMM)

Overview	Maintaining Active Citizens (MAC) is the Area Agency on Aging (AAA) in Salisbury, MD, and serves surrounding counties. Clients receive home visits to establish them for home nutrition services and then are screened for malnutrition risk, food insecurity, and other social determinants of health. Appropriate interventions are put into place based on areas of concern identified in the screening and the client is followed by a community health worker through home visits and follow up calls. Meal packages are provided based on malnutrition and food security risk, and also can be given as “emergency” bags when recently discharged from the hospital.
Goals	Collaborative and encompassing approach to combat malnutrition.
Funding Source(s)	Grant funding.
Target Population	Seniors at-risk for malnutrition.
Meal Types	The program offers different types of meals based on client needs. There are fresh fully-prepared meals, soups, shelf-stable emergency food bags, and shelf-stable snack bags. Meal bags were designed with input from community members about what would be acceptable to members of the population being served. The RDN meets with each participant to determine the best meal package plan for that person. Food items in the meal packages are low in sodium, fat, and added sugar, and are high in fiber. All meals meet the nutritional standards set by the Maryland Department of Aging and provide one-third of the RDI for older adults and 30 grams of protein.
Outcomes	Project is still underway.
Costs	~\$3 per meal. Emergency meal bags provide meals for about \$3 per meal, coming to about \$10 per bag (three meals).
Distribution Methodology	MAC is responsible for packaging and distributing the meal packages to participants homes.
Sources	(Simon, Beardsley, Davidson, Lachenmayr, & Eagle, 2018)

Metropolitan Interfaith Association (MIFA) No Hungry Senior

Overview	The Metropolitan Inter-Faith Association (MIFA) serves the Memphis, Tennessee metropolitan area with programs for seniors and families. In 2014 MIFA initiated the No Hungry Senior program in partnership with the Aging Commission of the Mid-South (ACMS), Mid-South Food Bank, Catholic Charities of West Tennessee, the Memphis Jewish Federation, the Common Table Health Alliance, Baptist Memorial Health Care, and Methodist Le Bonheur Healthcare. The program began with a pilot in 2014 with 20 clients and was expanded to 35 in 2015 with the receipt of a new grant from the H. W. Durham Foundation.
Goals	The goals of the program are to reduce the number of food-insecure seniors in Shelby County, improve and maintain seniors’ overall health, and reduce hospitalizations and emergency room utilization.
Funding Source(s)	Initially, a three-year, \$3.98 million grant from the Plough Foundation funded the program. A subsequent \$50,000 grant came from the H. W. Durham Foundation for FY2015. Funding also came from the Wal-Mart Foundation and the Jewish Federations.
Target Population	Shelby County residents in Tennessee, 60 years or older. Specifically focusing on those that are homebound, recently discharged from hospitals, or particularly challenged by a lack of transportation. Clients were identified from the agency’s Meals on Wheels waiting list.
Meal Types	<ul style="list-style-type: none"> • 5 home delivered hot/frozen meals delivered M-F by MIFA (for highest need clients) • 7 shelf-stable meal box delivered weekly by MIFA and Catholic Charities (for those who can do some light meal preparation) • 5 home delivered hot/frozen kosher meals per week provided by Memphis Jewish Federation

	<ul style="list-style-type: none"> 7 shelf-stable meal box given at discharge by Baptist Memorial Health Care and Methodist Le Bonheur Healthcare
Outcomes	<p>Outcomes from 1-year post-enrollment compared with 1-year pre-enrollment found an overall reduction of healthcare utilization, including a 34% reduction in inpatient admissions. Participants also experienced a significant reduction in feelings of loneliness. There was also a high acceptability of the food and meals.</p> <p>Some of the lessons learned from this program were:</p> <ul style="list-style-type: none"> Food waste was an issue; the quantity of food delivered was sometimes too much for the seniors to consume. The Food Bank had difficulty sourcing low sugar and low salt foods that fit into their meal plans because they were high cost and harder to find. Effective communication with collaborators required having a dedicated point of contact/team. Having a 6-month planning period and regular meetings with project partners lead to greater success with project implementation.
Costs	<p>~\$7 per meal.</p> <p>Average cost per client (including food costs, delivery, admin) came to less than \$7 per day (\$1,800 per client per year, one meal per day).</p>
Distribution Methodology	Meals are distributed by volunteers. MIFA produces the meals, Mid-South Food Bank sources the foods, and Catholic Charities manages meal deliveries.
Sources	(<i>Member Partnership Guide: Keys To Greater Collaboration and Impact to Better the Lives of Older Adults</i> , 2016), (MIFA, n.d.), ("MIFA - Metropolitan Inter-Faith Association - Home," n.d.)

Humana Dine Well

Overview	This program provides nutritious meals to eligible Medicare Advantage members recovering from an inpatient stay in a hospital or skilled nursing facility. Meals also are available for some Humana Medicare members who are enrolled in a qualified chronic-condition special needs plan. The chronic conditions supported by this program include diabetes, chronic obstructive pulmonary disorder (COPD), congestive heart failure (CHF) and some other cardiovascular disorders.
Goals	Overall goal is to improve member health and wellbeing. Meals are intended to provide proper nutrition after a long-term illness or condition that may have caused loss of important vitamins and proteins. The program doesn't just serve meals, they keep track of patients and know all about their well-being, so that they can provide the proper meals to their door.
Funding Source(s)	Health plans/membership.
Target Population	Seniors who are Medicare Advantage members.
Meal Types	<p>There are several diets a Humana Member could choose from such as regular, pork-free, fish-free, pureed, diabetic, vegetarian, pureed, renal supportive options and kosher meals.</p> <p>Patients who have been discharged from a hospital or skilled nursing facility (SNF) receive 10 frozen, packaged, low-sodium meals. Patients can receive meals in conjunction with up to four hospital/SNF admissions per year.</p> <p>Patients who are eligible for the chronic condition meals program receive 20 frozen, packaged meals that support the special dietary needs of that chronic condition. Patients with multiple conditions can receive multiple benefits.</p>
Outcomes	Humana Medicare Advantage members who participate in the Well Dine delivery program have fewer hospital readmissions, shorter hospital stays and fewer emergency-room visits.
Costs	No cost to the recipients, cost per meal unreported.
Distribution Methodology	Via health care providers; health care providers send a referral and Humana arranges meal delivery.
Sources	("Humana and Well Dine Deliver Program's One Millionth Meal in Knoxville Humana Healthcare," 2010), (Humana Inc., 2019)

Better Meals (Vancouver)

Overview	Established in 1993, Better Meals offers a wide selection of nutritious meals and à la carte food items including breakfast, homemade pies, side dishes, and 3 course dinners (soup, entree, and dessert), fresh sandwiches and wraps, snacks, and à la carte individual dinners. Meals are delivered in the service area of Greater Vancouver, Fraser Valley, Greater Victoria, Mid Vancouver Island and into the Okanagan and Interior.
Goals	<p>Providing natural, tasty and beneficial meals with nutritional value conveniently delivered. They strive to provide meals made from scratch that are:</p> <ul style="list-style-type: none"> Cooked using healthy fats and minimal added salt Provide adequate calories and protein to support health during illness and healing Evocative of warm memories and feelings of comfort Culturally appropriate

	<ul style="list-style-type: none"> • Designed to provide 50-67% of daily nutrition • Tailored to meet the medical and nutritional needs of each client
Funding Source(s)	Money collected for the meals; individuals place orders online and weekly delivery is free.
Target Population	Seniors in the service area of Greater Vancouver, Fraser Valley, Greater Victoria, Mid Vancouver Island and into the Okanagan and Interior.
Meal Types	Regular, diabetic, low sodium, minced, and à la carte. Meals are made with: <ul style="list-style-type: none"> • No MSG or preservatives are added • Natural spices are used to reduce sodium • Full course and à la carte meals are blast frozen to maintain freshness and preserve nutrients • Salads and sandwiches are prepared shortly before their arrival for a refreshing taste
Outcomes	Not reported.
Costs	~\$6.75 per meal. Varies based on type of meal (i.e. regular, special, etc.) and full course dinner and à la carte options; Cost of full course dinner including soup, entrée, and dessert is \$6.75. Minimum order per delivery is \$30.
Distribution Methodology Sources	Home delivered meals; delivered weekly (free); orders may be placed online. ("Better Meals," 2019)

Community Servings

Overview	Community Servings is a Boston-based not-for-profit organization with a 27-year history of providing medically-tailored meals and nutrition services to individuals and their families coping with critical and chronic illnesses. They provide 2 meals per day for 5 days per week to provide 50-67% of daily needs. Eligibility is based on extent of illness, clients' lack of mobility, and factors that make it difficult to cook and shop (food desert, wheelchair, not able to carry groceries). The program also provides nutrition education and counseling for clients who are no longer in need of delivered meals.
Goals	Improve health outcomes for critically ill clients and reduce health care costs.
Funding Source(s)	Funding from charitable financial, in-kind donations from corporations, foundations and individuals.
Target Population	Critically ill individuals including adults and children.
Meal Types	17 medical diets with up to three combinations per patient including bland – mild and low in sodium, children's menu, chopped/soft, diabetic, heart-healthy, low-fat/low cholesterol, low fiber, no citrus/tomatoes, no dairy, no eggs, no fish/shellfish, no nuts, no poultry, no red meat, low vitamin K, renal, vegetarian, and nausea care packages.
Outcomes	Study to look at role of medically-tailored meals on health of clients from the perspective of healthcare workers (case managers, nurses, physicians) who referred patients to Community Servings' services through qualitative interviews and online surveys found improved psychosocial well-being (relieved anxiety so that energy can be focused on treatment); promoted healthy weight (stabilize or gain weight); provided high-quality, holistic care (care for the whole patient); improved adherence to medications and treatments (reduces side effects). 96% reported that the meal program improved their clients' health; 65% believed the program resulted in decreased hospitalizations; 94% believed the program significantly improved patients' access to healthy food; 16% net reduction in average monthly health care costs for patients who received the Community Servings home delivered, medically-tailored meals.
Costs	\$350 monthly per person.
Distribution Methodology Sources	Home delivered meals. They deliver to 20 different cities or 300 square miles; clients outside of delivery area can pick up meals. (Berkowitz et al., 2018), ("Community Servings Food Heals," 2019), ("Financials Community Servings," n.d.)

Diabetes Initiative Food Box – Feeding America

Overview	Feeding America Diabetes Initiative provides diabetes-appropriate food to clients through monthly or bi-monthly food distributions. The Feeding America Diabetes Initiative was piloted at three member food banks that offered tailored services to people with diabetes. These services included nutrition education, blood sugar monitoring, healthy food and referrals to primary care providers.
Goals	Improve diabetes outcomes and reduce food insecurity.
Funding Source(s)	Funding from the Bristol-Myers Squibb Foundation, the Food Bank of Corpus Christi (Corpus Christi, TX), the Mid-Ohio Foodbank (Columbus, OH) and the Redwood Empire Food Bank (Santa Rosa, CA).
Target Population	Individuals with diabetes struggling with food insecurity.

Meal Types	Diabetes-friendly diet box. Food items provided include whole and unrefined grain products, fresh fruits and vegetables, canned fruits in own juice, low-sodium vegetables, sauces, soups, low-fat dairy, lean meats, and beans.
Outcomes	Individuals with diabetes showed improvements in pre-post analyses of glycemic control (hemoglobin A1c decreased from 8.11% to 7.96%), fruit and vegetable intake (which increased from 2.8 to 3.1 servings per day), self-efficacy, and medication adherence. Among participants with elevated HbA1c (at least 7.5%) at baseline, HbA1c improved from 9.52% to 9.04%. Lessons learned from this pilot include: <ul style="list-style-type: none"> • Clients requested utensils, spices and cooking oil needed to cook items in the food boxes. • Providing recipes and tips was found to be valuable.
Costs	~\$0.38 - \$0.94 per meal. On average, boxes cost \$16 and are intended to support meals for 1-2 weeks. If recipients are averaging 3 meals per day from the contents of these boxes, this comes to approximately \$0.38 - \$0.94 per meal.
Distribution Methodology	Two general methods of distribution: <ul style="list-style-type: none"> • Clients coming to food pantries are screened for diabetes, then offered a diabetes-friendly box to help them make good choices for their meals. • Provider referral. Clients without a doctor are referred to a local provider who can make sure they get the healthcare services, including medication and blood sugar testing supplies that they need to manage their disease.
Sources	(Prendergast, 2014), (Seligman, Bindman, Vittinghoff, Kanaya, & Kushel, 2007), (Seligman et al., 2015) (Feeding America, 2019), (Feeding America, n.d.)

Food & Friends

Overview	Food & Friends provides meals, groceries, nutrition counseling and a two hour cooking class called CHEW to people living with life-challenging illnesses such as HIV/AIDS and cancer. Determination of eligibility is entirely health-based. Food & Friends has no requirements for income or insurance coverage.
Goals	To improve the lives and health of people with HIV/AIDS, cancer and other serious illnesses that limit their ability to provide nourishment for themselves.
Funding Source(s)	Financial support comes from individuals, corporations/foundations, public funding and in-kind donations from corporations and individuals.
Target Population	To be eligible for services, one must have AIDS, cancer, poorly-controlled diabetes or be receiving hospice care, have a compromised nutritional status and a limited ability to prepare his/her own meals. Food & Friends' clients must be referred by a healthcare provider.
Meal Types	11 different meal plans including regular, pureed, diabetic, shelf-stable, renal, no dairy, heart-healthy, soft, vegetarian, no fish, and gastrointestinal friendly. Each Food & Friends meal delivery contains 2 days-worth of food including a variety of fresh and frozen components. Each delivery includes food for breakfast, lunch and dinner, along with liquid nutritional supplements, as needed.
Outcomes	858,021 meals served to 2,624 clients in 2017. Health outcomes improved – 72% reported improved health, 76% felt better able to follow their doctor's orders, 73% reported being better able to manage the side effects of their treatment or medications, 66% reported fewer hospitalizations after receiving services, 88% found it less stressful to provide food for themselves and their family.
Costs	No cost/fee for services to clients.
Distribution Methodology	Meals are delivered by volunteers and staff.
Sources	("Food & Friends," n.d.)

New Opportunities, Inc.

Overview	New Opportunities, a senior nutrition services provider, partnered with Care Transitions, a care management coordination provider to provide high risk hospital patients meals for 30-90 days and nutrition counseling and education.
Goals	To prevent readmission for high risk seniors recently transitioning from hospital to home.
Funding Source(s)	The CT Community Foundation and Meals on Wheels.
Target Population	High risk seniors recently transitioning from hospital to home. For the pilot, 4 individuals were selected from a partner health provider.
Meal Types	2 medically appropriate meals per day.

Outcomes	In a five-month period the program showed a 100% success rate keeping four patients referred to the program at home for 60 days or more.
Costs	The program spent \$1,500 for four patients over 60 days.
Distribution Methodology	Home delivered meals. Drivers deliver the meals. The program trained drivers to track health status and send report back to Senior Nutrition Services and they would contact cardiologist if there were red flags.
Sources	(American Society on Aging, 2017)

God's Love We Deliver (GLWD) –New York

Overview	<p>The program prepares and delivers nutritious, high quality meals to people who, because of their illness, are unable to provide or prepare meals for themselves. GLWD also provides illness-specific nutrition education and counseling to clients, families, care providers and other service organizations. All services are provided free of charge without regard to income.</p> <p>The program provides home delivered meals determined by an RDN and executive chef. Each week clients receive 10 meals, as well as nutrition counseling and education. Clients get their first meal within 1-4 days of signing up. The program also provides nutrition tip guides for HIV, breast cancer, colorectal cancer, and prostate cancer as well as older adults and caregivers.</p>
Goals	GLWDs aim is to improve the health and well-being of men, women and children living with HIV/AIDS, cancer and other serious illnesses by alleviating hunger and malnutrition.
Funding Source(s)	Funding includes government, private including corporations and foundations, and individual giving.
Target Population	Men, women, and children living with HIV/AIDS, cancer, Alzheimer's disease, ALS, Parkinson's disease and other life-altering illnesses throughout the five boroughs of New York City, Westchester and Nassau Counties, and Hudson County, NJ.
Meal Types	Medically-tailored meals with choices that include regular, modified, children's and vegetarian. They follow a four-week menu cycle with each meal containing a soup, entrée, bread and dessert. Clients with special needs work with a RDN.
Outcomes	7000 served annually; 1.2 million home delivered meals; 90% of clients live below the poverty line.
Costs	Free to clients.
Distribution Methodology	Home delivered to 5 boroughs of NYC, Hudson County, and 2 congregate sites in Newark, NJ.
Sources	("How It Works God's Love We Deliver," n.d.), ("Menu God's Love We Deliver," n.d.), ("Our Impact God's Love We Deliver," n.d.)

Home Plate Meal Program

Overview	<p>The Home Plate Meal Program (HPMP) is administered by the Johnson County Area Agency on Aging. The program is supported by the Older Americans Act and provides short-term meal service to seniors and retired veterans post hospital discharge.</p> <p>Once a patient is discharged from the hospital, they are referred to the HPMP by a discharge planner or social work staff member. Following referrals, staff member at the Johnson County Area Agency on Aging contacts patient within 72 hours of hospital discharge to make arrangements to deliver a meal package.</p> <p>A nutrition assessment is completed within 3 days of discharge and follow-up calls are made to evaluate additional service needs such as a home-visiting nurse, ongoing nutrition services, etc.</p>
Goals	The program goal is to assist seniors and retired veterans in their recuperation, decreasing the incidence of hospital readmission.
Funding Source(s):	Government and clients (donations).
Target Population	Patients age 60+, homebound, and discharging to a home in Johnson County from a participating hospital/rehabilitation facility.
Meal Types	Microwavable 7-day frozen meal package (meat entree, vegetable, fruit, dessert, and whole wheat bread or cornbread, and milk).
Outcomes	Program is currently suspended.
Costs	Donations accepted as payment.
Distribution Methodology	Following a referral to the HPMP, a staff member with the Johnson County Area Agency on Aging will contact the patient to make arrangements to deliver the 7-day frozen meal pack to the patient at home within 72 hours of hospital discharge.
Sources	("Home Plate Meal Program Johnson County Kansas," n.d.)

Independent Living Systems (ILS)

Overview	Independent Living Community Services Inc. (ILS) is a non-profit organization in Miami-Dade County, Florida. ILS aims to deliver meals, community-based services that improve the daily living experience for special needs populations from children to the elderly as well as rebalancing costs across the healthcare system. The program offers home delivered meals, nutrition counseling and care coordination. ILS currently delivers 800,000 meals per month through Care Delectable meal delivery.
Goals	The program seeks to improve community-based care transitions, outcomes, and reduce readmissions and overall cost.
Funding Source(s)	Government sponsored and private insurance plans.
Target Population	The elderly, special needs, and at risk-populations in Miami with qualifying health plans.
Meal Types	Offer 10 frozen home delivered meals (regular heart friendly, fish free, pork free, diabetic, gluten free, renal, vegetarian, puree, kosher).
Outcomes	Florida's Experience: Expanding the CMS Care Transition <ul style="list-style-type: none"> • Community readmission rate: 22.1% • 30-day readmission rate: 13.5% (meals only) • 30-day readmission rate: 7.6% (meals and nurse visit) • Post discharge 10 frozen meal packages, data shows reduced readmission rates • From June 2015- April 2015: readmission rate decreased by 65%
Costs	~\$8.90 per meal. The service used is Care Delectables. After discount, Care Delectables meals cost \$89.00 for a 10-pack excluding applicable taxes.
Distribution Methodology	Meals are delivered to the home immediately upon discharge from a hospital or nursing home. Care Delectables delivers via 2nd day air freight in dry ice in specially designed packaging. Meals can be heated in a conventional oven or microwave by following simple instructions.
Sources	(Suazo, n.d.), ("Independent Living Systems Launches New "Care Delectables" Nationwide Home-Delivered Meals Service," n.d.), ("Care Delectables - Home Delivered Meals," n.d.)

Carer Gateway (Australia)

Overview	Carer Gateway provides meal assistance, including but not limited to the following: provisions of meals at a community center or at home, help preparing meals at home, help with shopping for food, help with making meals and storing food in the home, help with learning to cook, and delivering meals to the home. The starting point to accessing the service is My Aged Care, a service funded by the Australian Government.
Goals	To help older people live as independently as possible.
Funding Source(s)	Australian government. The National Disability Insurance Scheme (NDIS) can be used to fund assistance with meal planning, preparation, and cooking as well as delivered meals.
Target Population	Individuals 65 years or older (50 years or older and identify as Aboriginal or Torres Strait Islander person) or 50 years or older (45 or older for Aboriginal and Torres Strait Islander people) and low income, homeless or at risk of being homeless.
Meal Types	Help with shopping for food, help with making meals and storing food in the home, help with learning to cook, delivering meals to the home, and providing meals at a community center.
Outcomes	None available at this time.
Costs	Varies.
Distribution Methodology	Meals can be home delivered and many programs rely on non-government organizations to deliver services.
Sources	("Meals Assistance Carer Gateway Australian Government," 2018)

Seniors Community Care (Australia)

Overview	The Seniors Community Care program offers clients prepared meals that are delivered to the home. The program has an extensive menu that provides both fresh chilled and frozen meals. The nutritious and healthy meals are prepared and home delivered twice a week.
Goals	Seniors Community Care aims to offer services of the highest standard and support independent living for individuals.
Funding Source(s)	Cost of meals paid for by individual(s) ordering the food/meals.

Target Population	Seniors or aged persons; disabled persons; individuals managing at home after an illness, injury or hospital stay or, any individual who likes the convenience of prepared meals.
Meal Types	Meal options include diabetic, low sodium, low fat, vitamised, diced, gluten free or vegetarian options, within the selection of fresh meals also available upon request.
Outcomes	None available.
Costs	~\$10.30 - \$12.90 per meal. Fresh cooked chilled dinner size small is \$10.30 and medium is \$12.90.
Distribution	Meals are delivered fresh, chilled, and frozen on a regular or as needed basis.
Methodology	
Sources	("Home Delivered Meals Seniors Community Care," n.d.), (Home Delivered Meals, 2017)

Maryann's Kitchen (Australia)

Overview	Maryann's Kitchen offers fresh, healthy and home delivered meals for people who are elderly, disabled, and recovering from illness and surgery.
Goals	Meal delivery is their primary goal.
Funding Source(s)	Fee for meals.
Target Population	Elderly, disabled, and those recovering from illness and surgery.
Meal Types	They offer a different meal each day, over a 28 day period, with menus changing every 6 months. They offer a special weekend menu. Meals consist of a main course, with choice of dessert or soup or salad. Meal types include regular and diabetes. They cater to special dietary needs on an individual basis.
Outcomes	None available.
Costs	~\$7 per meal. \$14.00 per day per 2 course meal or \$70.00 per week.
Distribution	Meals can be delivered daily hot or cold. Daily, weekday and weekend meal plans available. Extra surcharges may apply if ordering less than 5 meals per week.
Methodology	
Sources	("Home - MARYANN'S KITCHEN," 2019), (Maryann's Kitchen, 2018)

Tender Loving Cuisine (Australia)

Overview	Tender Loving Cuisine (TLC) was established in 1995 and provides meals with a homemade taste at an affordable price. TLC delivers meals frozen.
Goals	TLC aims to improve the quality of life for older people and individuals in need by providing the highest quality meals.
Funding Source(s)	Fee for meals.
Target Population	All ages.
Meal Types	Regular, diabetes friendly, gluten-free, heart friendly, dairy-free, low salt, textured soft, minced moist.
Outcomes	None available.
Costs	~\$8.40 to \$13.75 per meal. Saver menu cost starts at \$8.40 per meal, premium meals start at \$13.75; bundle packages can further reduce meal prices.
Distribution	Delivered to the home, business or senior village.
Methodology	
Sources	("Our Mission - Tender Loving Cuisine," n.d.)

Swedish Municipal Food Distribution

Overview	The program offers two key services, including: (1) The municipal Food Distribution service (FD) which provides services targeting individuals who are unable to do their own grocery shopping, and prepare their own meals and (2) home delivered meals.
Goals	The goal of the program is help elderly people and those with disabilities age in place.
Funding Source(s)	Elder care in Sweden is funded by municipal taxes and government grants. In 2014, the total cost of elderly care in Sweden was SEK 109.2 billion (USD 12.7 billion, EUR 11.7 billion), but patient charges were only 4% of the cost. Healthcare costs paid by the elderly are subsidized; the degree of subsidization is based on specified rate schedules.
Target Population	Persons who are unable to do their own shopping, and prepare their own meals.

Meal Types	Various types – meal boxes which are hot, chilled or frozen with different delivery frequencies.
Outcomes	360,000 meals are served within elderly care.
Costs	Variable – low as government and welfare system covers.
Distribution	Home delivery with different delivery options.
Methodology	
Sources	("Elderly care in Sweden," n.d.), (Pajalic, 2013), (Josefsson, 2018)

Impact on the MDMP

Meal Packages

Review of previous and ongoing meal package programs from this report have informed the development of the MDMP meal packages' menu and design. An example of two menus from programs profiled in this report is found in Appendix A. Familiarity and recognizability of the food items in the meal packages was an important aspect of the menu design. This way, once the meal packages run out participants can recognize and find replacement food items to purchase that also fit their nutritional needs. For example, a patient with heart failure might leave the hospital with an order to follow a low-sodium diet. When they are given the CC/HH meal packages and the accompanying menu they will know that they are eating a low-sodium diet and they will get a better idea of what it is like to follow this type of diet. Once they have consumed all of the MDMP meals, they can then purchase foods that are similar to those found in the meal packages, such as low-sodium soups.

The cost of meals in other programs was scrutinized for reference. Meals from the programs profiled in this report tended to cost an average of \$10 or less, with some as low as \$3 per meal. The MDMP packages aim to meet or exceed the cost effectiveness of these meals. Many of the food items can be purchased at discount stores such as Walmart and Dollar Tree. These stores are also usually accessible in most locations, even those considered to be "food deserts." This way, once the participant has consumed the meal packages, they will be able to find replacement items easily and affordably.

The flexibility and cost-effectiveness of prepackaged, shelf-stable foods was determined to be useful for the MDMP. The MDMP meal package food items are entirely shelf-stable, require minimal preparation, and are easy to open. Almost all of the other programs profiled in this report included a component of fresh or frozen, fully-prepared meals. As the MDMP progresses through and beyond the pilot period, it will be important to assess whether including a fully-cooked meal option in the program will be cost-effective, viable and appealing to clients.

Educational Materials

Evaluating other programs illuminated the need for effective educational materials to inform participants as well as staff. A sample of an educational handout can be found in Appendix B. Educational materials are designed to accompany the MDMP meal packages and also to inform the hospital staff/healthcare workers that are providing the meal packages. Other programs' materials also informed MDMP workflow, including a patient selection flowsheet, ordering protocol, and additional resources for patients who do not meet the criteria or need additional help to access assistance. A sample of workflow and patient selection can be found in Appendix C. Some programs had specific referral forms (seen in Appendix D). The MDMP does not use referral forms but a patient selection flowchart to determine patient eligibility as well as a consent form for the patient to sign.

Target Population

The MDMP is specifically intended to address malnutrition risk in older adults. The program further focuses in on chronic conditions that have the highest rate of readmissions for the pilot hospitals. Many of the other programs that were reviewed were not specific to senior populations, but addressed malnutrition risk for specific sub-populations based on income, disease, or insurance type. Malnutrition risk was sometimes identified using an assessment tool either developed by the program or an established verified tool. However, almost every program focused on specific medical conditions that are highly associated with malnutrition risk. Almost invariably, programs did not approach participant identification using a diagnosis of malnutrition as an eligibility criterion. The MDMP quickly discovered through review of similar programs and through collaborations with pilot hospitals that eligibility assessments needed to focus on specific medical conditions and risk-assessment tools to determine eligibility rather than relying on a diagnosis of malnutrition or referral for malnutrition treatment.

Other Impacts & Considerations

One theme that frequently emerged in this review of similar programs was the importance of inter-institutional collaboration and effective communication between partners. A report on the progress of the MIFA No Hungry Senior initiative (*Member Partnership Guide: Keys To Greater Collaboration and Impact to Better the Lives of Older Adults*, 2016) stated that one of the challenges for the program was the great number of collaborators involved. They found that effective communication would be a key to success for similar programs. As MDMP moves forward and more partner organizations get on board, setting up frequent meetings and having communication platforms to keep everyone apprised and engaged in ongoing efforts will be paramount.

Funding for these programs came from a variety of sources. The meals cost on average \$10 or less for the programs profiled in this report. The packages currently being designed for the MDMP pilot average about \$11.50 for a full day (3 meals, 2 snacks) or \$2.30 per meal/snack (for food costs alone). Although this cost is on par with or less than these other programs, it will still require adequate and ongoing funding to be effective. Federal and State grants can provide financial support from the public sector, but the program can also look to private-sector and healthcare funding sources. For example, if partnering with a non-profit organization the program could take a note from MANNA in Philadelphia and utilize philanthropic donations from individuals and organizations. MDMP can also look to funding from private pay, insurance reimbursement, etc.

Many of these programs relied on volunteers to distribute and package food. Transportation will be required while meals are being distributed to clients in the community and while procuring items for the meal packages. This transportation requires vehicles, gas, and drivers. MDMP is addressing this through several different avenues. In some cases, participant hospitals have community health workers who are visiting discharged patients at home as part of their transitional care. This will provide an opportunity for the packages to be delivered during these visits. In other scenarios, the patient will be returning to the hospital's transitional care clinic for a follow up visit and they will receive the packages there. This has an added advantage of providing an additional incentive to the patient to return for their follow-up visits. However, the issue of transportation and accompanying costs and required resources will be an ongoing issue area to look at while expanding the program.

Continual Network Support and Feedback

As the MDMP pilot progresses, continued support and feedback from a network of groups working on similar initiatives will be essential. As much as previous projects have impacted the MDMP design and process, groups around the US and abroad are concurrently working on initiatives or evaluating results from projects that can continue to help to inform the MDMP pilot and ultimately the expansion of the larger Maryland implementation.

Slack Network

The MDoA has brought together representatives from a variety of programs and initiatives around the country virtually using a Slack network (www.slack.com) to share materials, information and perspectives. Slack is an online networking tool that provides a shared collaborative workspace that combines communication through chat and instant messaging with sharing documents and other resources. MDoA intends to use this online network of collaborators to support the MDMP initiative and, in turn, provide support to other similar ongoing and future programs.

Quarterly Phone Meetings

Once a quarter, members are invited to a telephone conference call hosted by the MDoA MDMP representatives. Members range across acute, post-acute and community-based providers and are from 20 different states across the United States. Each quarter 1-2 programs are highlighted to share details about their initiative, outcomes, and ongoing processes. This collaborative space is yet another way to share ideas, provide feedback, and learn from other programs to provide ongoing support to the MDMP and other initiatives around the country.

Conclusion and Acknowledgements

Maryland, and all states across the US, have an exciting and challenging opportunity to address senior malnutrition and chronic illness with post-discharge meal package programs. The MDMP is a unique example for others to consider, given it is entirely shelf-stable, medically-tailored, and connects patients discharged from hospitals to resources in the community and resources in their doctor's office.

The authors wish to thank and acknowledge similar programs and initiatives around the country and around the globe which have informed the development of the MDMP. We also thank the Maryland Department of Aging's staff, Laura Sena, MSPH, RD, LDN and Judy Simon, MS, RD, LDN for their contributions by editing this material and compiling much of the foundational information presented in this document. The Maryland Department of Aging's work coordinating the national peer network has facilitated cross-organizational discussions and will continue to impact the program as MDMP is implemented and eventually grows to a larger initiative.

References

- Administration for Community Living, & Administration on Aging. (2014). *Older Americans Act Nutrition Programs Fact Sheet*.
- Administration on Aging. (2017). Profile of Older Americans. *ACL Administration for Community Living*, (April). https://doi.org/10.1300/J369v06n01_06
- American Society on Aging. (2017). A meals program in Connecticut keeps cardiac patients at home and out of the hospital. *Aging Today*, 38(4). Retrieved from https://www.aginganddisabilitybusinessinstitute.org/wp-content/uploads/2017/09/ATv38n5_SUPPL-Meals_Program.pdf
- Application for Project Angel Heart meals - Project Angel Heart. (n.d.). Retrieved March 6, 2019, from <https://www.projectangelheart.org/our-meals/get-meals/18-application/>
- Apply for MANNA Services - MANNA. (n.d.-a). Retrieved January 29, 2019, from <https://www.mannapa.org/services/apply-for-manna-services/>
- Apply for MANNA Services - MANNA. (n.d.-b). Retrieved February 15, 2019, from <https://www.mannapa.org/services/apply-for-manna-services/>
- Berkowitz, S. A., Delahanty, L. M., Terranova, J., Steiner, B., Ruazol, M. P., Singh, R., ... Wexler, D. J. (2018). Medically Tailored Meal Delivery for Diabetes Patients with Food Insecurity: a Randomized Cross-over Trial. *Journal of General Internal Medicine*. <https://doi.org/10.1007/s11606-018-4716-z>
- Better Meals. (2019). Retrieved January 29, 2019, from <http://bettermeals.ca/index.php/main/links/index>
- Braveman, P. (n.d.). *The Social Determinants of Health_Braveman.pdf*. 622.
- Buys, D. R., Campbell, A. D., Godfryd, A., Flood, K., Kitchin, E., Kilgore, M. L., ... Locher, J. L. (2017). Meals Enhancing Nutrition After Discharge: Findings from a Pilot Randomized Controlled Trial. *Journal of the Academy of Nutrition and Dietetics*. <https://doi.org/10.1016/j.jand.2016.11.005>
- Care Delectables - Home Delivered Meals. (n.d.). Retrieved February 5, 2019, from <https://caredelectables.com/>
- Commodity Supplemental Food Program (CSFP) | Food and Nutrition Service. (n.d.). Retrieved February 15, 2019, from <https://www.fns.usda.gov/csfp/commodity-supplemental-food-program-csfp>
- Community Servings Food Heals. (2019). Retrieved from <https://www.servings.org/>
- Daugherty, S., Hoskins-Brown, A., & Laverty, N. (n.d.). *The MANNA Model* (p. 2). p. 2.
- Elderly care in Sweden. (n.d.). Retrieved February 25, 2019, from <https://sweden.se/society/elderly-care-in-sweden/>
- Feeding America. (n.d.). *Feeding America Diabetes Initiative: Food Boxes for Clients with Diabetes*.
- Feeding America. (2019). Hunger & Health: Feeding America | Explore our Work. Retrieved from <https://hungerandhealth.feedingamerica.org/explore-our-work/community-health-initiatives/>
- Financials | Community Servings. (n.d.). Retrieved March 6, 2019, from <https://www.servings.org/financials-accountability/>

Flavor-Harvest-at-HOME.pdf. (n.d.).

Flavor Harvest@HOME - AARP Foundation. (n.d.). Retrieved March 6, 2019, from <https://www.aarp.org/aarp-foundation/grants/info-2017/grantee-profile-harvest-flavor.html>

Food & Friends. (n.d.). Retrieved January 29, 2019, from <https://foodandfriends.org/>

Food is Medicine Coalition (FIMC). (2018). *The Need MTM FIMC Integration in Healthcare FIMC Service Primary Diagnosis Our Priorities To provide*.

Food, T., Coalition, M., Mcguire, S. M., Couch, C., Ceres, E., & Project, C. (n.d.). *California Medically Tailored Meal Pilot Overview*. (415).

Free / Medi-Cal Covered Medically Tailored Meals and Medical Nutrition Therapy for Discharged CHF Patients Scope of Intervention How to Refer. (n.d.). 0898(707), 898.

God's Love We Deliver. (2018). *God's Love We Deliver Modified Menu 2018*. 2018.

Guvey, J., Rand, K., Daugherty, S., Dinger, C., Schmeling, J., & Lavery, N. (2013). Examining health care costs among MANNA clients and a comparison group. *Journal of Primary Care and Community Health*. <https://doi.org/10.1177/2150131913490737>

Home - MARYANN'S KITCHEN. (2019). Retrieved February 25, 2019, from <http://www.maryannskitchen.com.au/>

Home Delivered Meals. (2017). *MANOR MEALS MENU*. 20(July), 35–36. Retrieved from <https://www.snrs.com.au/wp-content/uploads/Manor-Meals-Menu-Effective-1-July-2017.pdf>

Home Delivered Meals | Seniors Community Care. (n.d.). Retrieved February 25, 2019, from <https://www.snrs.com.au/services/home-delivered-meals/>

Home Plate Meal Program | Johnson County Kansas. (n.d.). Retrieved January 29, 2019, from <https://www.jocogov.org/dept/human-services/area-agency-aging/nutrition-services/home-plate-meal-program>

How It Works | God's Love We Deliver. (n.d.). Retrieved January 29, 2019, from <https://www.glwd.org/get-meals/how-it-works/>

Humana and Well Dine Deliver Program's One Millionth Meal in Knoxville | Humana Healthcare. (2010). Retrieved January 29, 2019, from Business Wire website: <https://press.humana.com/press-release/current-releases/humana-and-well-dine-deliver-programs-one-millionth-meal-knoxville>

Humana Inc. (2019). Humana Well Dine. Retrieved January 29, 2019, from <https://www.humana.com/provider/support/clinical/health/meals>

Independent Living Systems Launches New "Care Delectables" Nationwide Home-Delivered Meals Service. (n.d.). Retrieved February 5, 2019, from <https://finance.yahoo.com/news/independent-living-systems-launches-care-130000371.html?guccounter=1>

Josefsson, M. S. (2018). *Food Service and Nutritional Care in Swedish Elderly Care*.

Lee Health – Flavor Harvest@Home | AHA. (n.d.). Retrieved March 6, 2019, from <https://www.aha.org/case-studies/2016-09-01-lee-health-flavor-harvesthome>

- MANNA. (2017). *Form 990 Return of Organization Exempt From Income Tax*. Retrieved from <http://www.mannapa.org/wp-content/uploads/2018/06/MANNA-FY17-Form-990.pdf>
- Martin, S. L., Connelly, N., Parsons, C., & Blackstone, K. (2018a). Simply delivered meals: a tale of collaboration. *The American Journal of Managed Care*, 24(6), 301–304. <https://doi.org/10.1037/h0039764>.Bradley
- Martin, S. L., Connelly, N., Parsons, C., & Blackstone, K. (2018b). Simply Delivered Meals: A Tale of Collaboration. *THE AMERICAN JOURNAL OF MANAGED CARE*.
- Maryann's Kitchen. (2018). *Maryann's Kitchen Menu*. Retrieved from <http://www.maryannskitchen.com.au/wp-content/uploads/2014/05/MENU-April-September-2018-pdf.pdf>
- Mccarron, C. (2017). *Reimbursing Value-Based Care : The Benefits of MNT and Therapeutic Meals • Metropolitan Area Neighborhood Nutrition Alliance or*. 1–7.
- Meals Assistance | Carer Gateway | Australian Government. (2018). Retrieved March 6, 2019, from <https://www.carergateway.gov.au/meals>
- Meals on Wheels America. (n.d.). Retrieved January 29, 2019, from <https://www.mealsonwheelsamerica.org/>
- Medi-Cal Medically Tailored Meal Pilot Project*. (1996). 8748, 8748.
- Medicine, F. I. S. (n.d.). *Do you have heart failure ?* 8935.
- Member Partnership Guide: Keys To Greater Collaboration and Impact to Better the Lives of Older Adults*. (2016). (September). Retrieved from http://alliancetoendhunger.org/wp-content/uploads/2018/05/TOWNS_FA-and-MOWA-Partnership-Guide.pdf
- Menu | God's Love We Deliver. (n.d.). Retrieved January 29, 2019, from <https://www.glwd.org/get-meals/menu/>
- MIFA. (n.d.). *No Hungry Senior: A three year grant funded by the Plough Foundation*.
- MIFA - Metropolitan Inter-Faith Association - Home. (n.d.). Retrieved March 6, 2019, from <https://www.mifa.org/>
- Order Simply Delivered Meals. (n.d.). Retrieved March 6, 2019, from <https://smaaa.wufoo.com/forms/x10kswqr1jbjqlms/>
- Our Impact | God's Love We Deliver. (n.d.). Retrieved January 29, 2019, from <https://www.glwd.org/about-us/our-impact/>
- Our Mission - Tender Loving Cuisine. (n.d.). Retrieved February 25, 2019, from <https://www.tlc.org.au/about-us/our-mission>
- Pajalic, Z. (2013). The Swedish Municipal Food Distribution Service to the Elderly Living at Home as Experienced by the Recipient's Relatives. *Global Journal of Health Science*, 5(6), 12–18. <https://doi.org/10.5539/gjhs.v5n6p12>
- Prendergast, K. (2014). *Feeding America's Diabetes Initiative - Helping Clients Manage their Health | Feeding America*. Retrieved from <https://www.feedingamerica.org/hunger-blog/feeding-america-e2-80-99s-diabetes-initiative-helping-clients-manage-their-health>

- Project Open Hand. (2019). *March 2019 Wellness Menu*. Retrieved from [https://www.openhand.org/sites/openhand.org/files/POH Wellness Menu March 2019.pdf](https://www.openhand.org/sites/openhand.org/files/POH_Wellness_Menu_March_2019.pdf)
- Seligman, H. K., Bindman, A. B., Vittinghoff, E., Kanaya, A. M., & Kushel, M. B. (2007). Food insecurity is associated with diabetes mellitus: Results from the National Health Examination and Nutrition Examination Survey (NHANES) 1999-2002. *Journal of General Internal Medicine*, 22(7), 1018–1023. <https://doi.org/10.1007/s11606-007-0192-6>
- Seligman, H. K., Lyles, C., Marshall, M. B., Prendergast, K., Smith, M. C., Headings, A., ... Waxman, E. (2015). A pilot food bank intervention featuring diabetes-appropriate food improved glycemic control among clients in three states. *Health Affairs*. <https://doi.org/10.1377/hlthaff.2015.0641>
- Sharma, Y., Miller, M., Kaambwa, B., Shahi, R., Hakendorf, P., Horwood, C., & Thompson, C. (2017). Malnutrition and its association with readmission and death within 7 days and 8-180 days postdischarge in older patients: A prospective observational study. *BMJ Open*, 7(11), 1–8. <https://doi.org/10.1136/bmjopen-2017-018443>
- Simon, J. R., Beardsley, K., Davidson, T., Lachenmayr, S., & Eagle, L. A. (2018). Malnutrition Care Planning Post Hospital Discharge: Community-Based Senior Nutrition Programs and Social Services Can Effectively Support Older Adults. *The Spectrum*, (Special Edition), 42–49.
- SMAA/MMC Simply Delivered Meals (SDM) Pilot. (n.d.). Retrieved March 6, 2019, from <http://www.smaaacbo.org/healthcare/healthcare-study-results.html>
- Southern Maine Agency on Aging. (n.d.). Retrieved March 6, 2019, from <http://www.smaaacbo.org/healthcare/healthcare-survey-results.html>
- Suazo, L. (n.d.). *Role of Nutrition in an Integrated Care Coordination Model*. Retrieved from https://www.eiseverywhere.com/file_uploads/9f4628702c0d7cf0afe2b32018f53699_DINE.pdf
- Trust, T. H., & Food, A. (2017). *Medi-Cal Medically Tailored Meal (MTM) Pilot Program Frequently Asked Questions*. 3–4. <https://doi.org/10.1177/21500131913490737>
- World's older population grows dramatically | National Institutes of Health (NIH). (n.d.). Retrieved February 15, 2019, from <https://www.nih.gov/news-events/news-releases/worlds-older-population-grows-dramatically>

Appendix A: Sample Menus

GOD'S LOVE WE DELIVER MODIFIED MENU 2018

You may receive for MONDAYS:	You may receive for TUESDAYS:	You may receive for WEDNESDAYS:	You may receive for THURSDAYS:	You may receive for FRIDAYS:
Soup: Onion Barley Soup Potato Kale Soup Garbanzo Bean Barley Soup Lentil Vegetable Soup	Soup: Vegetable Chowder Black Eyed Pea Soup Tex Mex Minestrone Soup White Bean Kale Soup	Soup: Potato Leek Soup Vegetable Noodle Soup Curried Carrot Soup Mushroom Barley Soup	Soup: Green Pea Soup Mushroom Miso Soup Corn Chowder Summer Vegetable Minestrone	Soup: Black Bean Soup Spinach Lentil Soup Pasta White Bean Soup Split Pea Soup
Entrée: Ginger Glazed Salmon w/Asian Slaw, Fried Brown Rice, & Mixed Vegetables Roasted Tilapia w/Black Bean Salsa, White Rice, & Mixed Vegetables Thai Lemongrass Tilapia w/Vegetable Rice & Mixed Vegetables Baked Fishcake w/Basil Pesto Pasta & Mixed Vegetables	Entrée: Curry Chicken w/Rice Carrots, Zucchini, & Pearl Onions Chicken Casserole Green Beans, Wax Beans & Pearl Onions Coconut Chicken Stew Cauliflower & Broccoli Chicken Gumbo w/Rice Broccoli & Cauliflower	Entrée: Beef Bolognese w/Pasta & Mixed Vegetables Coconut Braised Beef w/Rice & Mixed Vegetables Meatloaf w/Onion Gravy, Pasta w/ Green Pea Pesto & Mixed Vegetables Summer Beef Stew w/TriColor Rotini & Mixed Vegetables	Entrée: Lentil Vegetable Stew Rice Tofu Eggplant Caponata Whole Wheat Pasta Broccoli & Roasted Red Peppers Chunky Vegetable Chili Rice Lentil Dal with Brown Rice Carrots, Yellow Squash & Zucchini	Entrée: Chicken with Mushroom Gravy Snap Peas & Yellow Squash Bow Tie Pasta Roasted Chicken Breast Carrots & Green Beans Couscous Hoisin Glazed Chicken Green Peas, Red Pepper & Carrots Fried Brown Rice Chicken w/Mango Chutney Broccoli, Red Pepper & Roasted Mushrooms White Rice
Dessert: Apple Cranberry Cake Zucchini Bread Peach Cake Vanilla Pound Cake	Dessert: Pineapple Bits Cake Apple Cornmeal Cake Pear Spice Cake Blueberry Scone	Dessert: Cranberry Scone Mixed Berry Cake Coconut Cake Blueberry Crumb Cake	Dessert: Seasonal Fruit	Dessert: Orange Lemon Cake Oat Scone Apple Ginger Cake Cranberry Scone

*Menus are subject to change without prior notice. May contain soy, eggs, and wheat.



Source: (God's Love We Deliver, 2018)

MARCH 2019 WELLNESS MENU

Monday	Tuesday	Wednesday	Thursday	Friday			
<p>MARCH is National Nutrition Month</p> <p>March is National Nutrition Month. The campaign created jointly by the American Dietetic Association and the American Nutrition Association focuses on the importance of making informed food choices and developing a healthy eating and physical activity habits.</p>  <p>30 to 60 Minutes Healthy Nutrition Month</p> <ul style="list-style-type: none"> • Eat more fruits and vegetables every day. • Choose foods and drinks that are good for your health. • Reduce the amount of saturated fats, sodium, and added sugars in your diet. • Get more physical activity every day. • Be more active every day. • Get more sleep. • Drink more water. • Limit alcohol. • Don't smoke. • Don't drink and drive. • Don't use tobacco. • Don't use prescription drugs without a doctor's advice. • Don't use prescription drugs without a doctor's advice. • Don't use prescription drugs without a doctor's advice. 	<p>1-Mar</p> <p>Roasted Pork Loin / Mushroom Herb Gravy Bulgur Broccoli & Cauliflower</p>	<p>Join us today for a nutritious and balanced meal. Make nutrition a focus of your day, this month and beyond!</p> 	<p>4-Mar</p> <p>Roasted Chicken Thigh / Mushroom Sage Gravy Penne Peas & Carrots</p>	<p>5-Mar</p> <p>Mongolian Beef Brown Rice Green Beans</p>	<p>6-Mar</p> <p>Baked Tilapia / Basque Sauce Bulgur Glazed Carrots</p>	<p>7-Mar</p> <p>Chicken Tetrazzini Stew Penne Broccoli & Cauliflower</p>	<p>8-Mar</p> <p>Roasted Pork Loin / Sweet & Sour Sauce Brown Rice Broccoli</p>
<p>11-Mar</p> <p>Roasted Chicken Thigh / Marinara Sauce Brown Rice Pilaf Carrots</p>	<p>12-Mar</p> <p>Turkey Bolognese Penne Green Beans</p>	<p>13-Mar</p> <p>Herb Roasted Chicken Thigh / Lemon Mustard Sauce Brown Rice Peas & Carrots</p>	<p>14-Mar</p> <p>Chicken & Eggplant Provencal Brown Rice Pilaf Normandy Vegetables</p>	<p>15-Mar</p> <p>Baked Herb Tilapia / Puttanesca Sauce Penne Glazed Carrots</p>			
<p>18-Mar</p> <p>Roasted Chicken Thigh / Paprikash Sauce Brown Rice Broccoli</p>	<p>19-Mar</p> <p>Turkey Meatloaf / Mushroom Sage Gravy Penne Peas & Carrots</p>	<p>20-Mar</p> <p>Roasted Pork Loin / Marsala Sauce Brown Rice Carrots</p>	<p>21-Mar</p> <p>Aima's Chicken Tinga Stew Brown Rice Green Beans</p>	<p>22-Mar</p> <p>Baked Tilapia / Sweet & Sour Sauce Bulgur Normandy Vegetables</p>			
<p>25-Mar</p> <p>Roasted Chicken Thigh / French Country Sauce Brown Rice Peas & Carrots</p>	<p>26-Mar</p> <p>Roasted Beef Patty / Onion Gravy Macaroni Carrots</p>	<p>27-Mar</p> <p>Roasted Pork Loin / Salsa Verde Brown Rice Carrots</p>	<p>28-Mar</p> <p>Chicken & Red Bean Stew Spanish Brown Rice Normandy Vegetables</p>	<p>29-Mar</p> <p>Roasted Tilapia / Puttanesca Sauce Penne Broccoli</p>			

Source: (Project Open Hand, 2019)



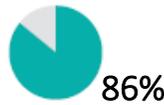
FIMC is an association of nonprofits across the nation that provide a complete, evidence-based, medical food and nutrition intervention to critically and chronically ill people in their communities

The Need

If you are sick and hungry in the United States, there is no federal nutrition support for you, unless you have HIV, and even that is not adequate to cover all who are in need. To meet this need, FIMC agencies raise most of their budgets, and some are forced to create waiting lists, because the need in their communities is so great. As more and more people are diagnosed with chronic illnesses that require specific diets, this need will only grow.



Predicted rise in chronic illnesses by 2020 [WHO]



Portion of healthcare spending attributed to individuals with chronic health conditions [CDC]



92% Older adults with at least one chronic disease
77% Older adults with at least two [NCoA]



1 in 3

People enter the hospital malnourished

Our clients are a complicated population, often living with multiple co-morbid illnesses. They require nutrition counseling and tailored meals not available from traditional meal or food providers.

The Intervention



are a low-cost/high-impact intervention

Medically tailored meals (MTM) are meals approved by a Registered Dietitian Nutritionist (RDN) that reflect appropriate dietary therapy based on evidence-based nutrition practice guidelines to address a medical diagnosis, symptoms, allergies, medication management and side effects to ensure the best possible nutrition-related health outcomes. MTM are often paired with medical nutrition therapy (MNT), an evidence-based application of the *Nutrition Care Process (Academy of Nutrition and Dietetics)* focused on prevention, delay or management of diseases and conditions, and involves an in-depth assessment, periodic reassessment and intervention.

The Solution

By making medically tailored nutrition a reimbursable service in our healthcare system for this high risk, high need, high cost population, we can produce:



better health outcomes



lower cost of care



improved patient satisfaction

The Outcomes



16%

net healthcare cost savings



28%

reduction in hospitalizations



23%

more likely to be discharged to home



50%

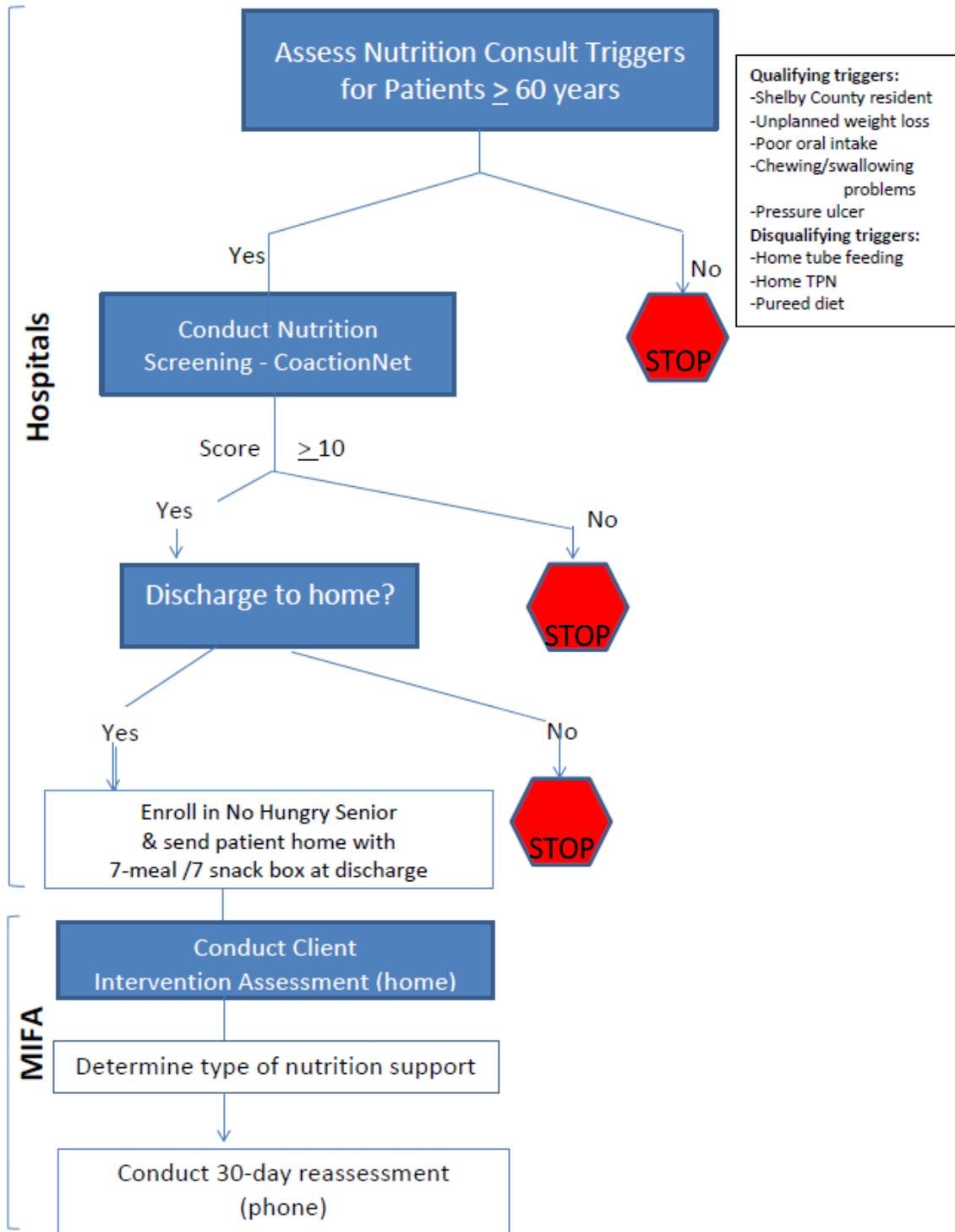
increase in adherence



11

new studies on the impact of MTM are in progress across the country at FIMC agencies

Appendix C: Sample Workflow



Source: MIFA No Hungry Senior program

Appendix D: Sample Referral Form



Print Form

Submit by Email

Application for Meals for Care Transitions

Project Angel Heart prepares and delivers medically tailored meals to help reduce patients' risk for readmission. Through our Meals for Care Transitions program, patients receive three meals per day for 30 days. Please complete the form below to initiate meals for your patient.

Today's Date Discharge Date

Patient Information:

First Name Last Name

Physical Address

City Zip Phone

Primary Language Written Spoken

Partially or Legally Blind Deaf Hard of Hearing

Is the patient our primary contact? Yes No

If not, who should we contact? Name Phone

Emergency Contact Phone

Relationship

Referring Provider/Case Manager/Dietitian:

Name Phone

Agency/Hospital Authorization

Diet*:

- Standard Healthy Diet (full-flavored, no modifications) Naked (no sauces or seasonings)
- Renal Friendly (lower in sodium, potassium and phosphorus)
- Heart Healthy (lower in fat and sodium) *diet offerings vary, please confirm with your supervisor

Delivery Information:

Nearest Intersection

Description of residence (apt/house, color, etc.)

Additional info (if applicable, name of apt. complex, door code, preference of front door or back, etc.)