

University Partnership Research Brief

“LSUHSC-NO Health Policy Honors Program Contributions to Promoting Evidence-Based Care to Louisiana Medicaid Members.” - Medically Tailored Meals (MTM)

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WHAT IS KNOWN ABOUT THE TOPIC?

Many chronic conditions are sensitive to patient nutrition. A poor diet can worsen morbidity, hasten complications onset, and increase the cost of caring for patients. Nationwide, there were approximately 1.594 million diet-preventable hospitalizations in 2021, costing \$38.7¹ Billion. Patients often have difficulty improving diet due to nutritious food costs, inadequate health literacy, and physical disabilities barring grocery shopping and food preparation. Medically Tailored Meal (MTM) programs are one potential way of addressing these gaps.

WHAT DID THIS PROJECT DO?

A search of research articles relating to the costs and benefits of MTMs identified a short list of studies that were recent, set in the US and included adequate controls. The core costs and benefits of these studies were summarized. Finally, a computer model was built using parameters drawn from these studies. The model can be used to estimate costs and benefits of an MTM program based on multiple levels of patient health risk.

INTRODUCTION AND BACKGROUND

MTM programs involve the home delivery of meals prepared under the supervision of registered dietitian nutritionists to meet the specific nutritional needs of the individual².

Programs cover from 10 to 21 meals per week and last 12 to 54 weeks³.

Patients most likely to benefit from MTM have nutrition-sensitive conditions, such as diabetes, congestive heart failure, myocardial infarction, other heart disease, emphysema, stroke, nonmelanoma cancer, HIV infection and

chronic kidney disease⁴. Because Medicaid patients are more likely poor and/or disabled, many diet-related health issues are also related to food insecurity⁵.

MTMs impact health mainly through improved adherence to dietary plans laid out by medical providers. For example, T2D patients receiving MTM have been found to have fewer hypoglycemic events⁶ and improved diabetes self-management⁷. MTMs also increase access to healthy foods (e.g., vegetables,

fruits, whole grains), reduce food insecurity, and reduce mental stress⁸.

The benefits of MTMs must be balanced against costs, which can range from \$1,200 to \$11,000 per patient.

Given this investment, MTM use is cost justified only when prescribed for patients who would have higher odds of an expensive emergency department or hospital admission if not enrolled in the program.

What can Medicaid do with this information?

Assess changes to laws and/or program benefits related to the provision of MTM to select Medicaid beneficiaries. Identify ideal candidates for this benefit based on health outcomes and budgetary impacts. Estimate the impact of benefit expansion, contraction, and demonstration projects using expectations based on national studies. Compare the actual costs and benefits of beneficiaries receiving MTM benefits against those of matched control beneficiaries to see how the program performs in Louisiana.

PROJECT DESIGN AND METHODOLOGY

The first step summarized what is already known about the costs and benefits of MTM programs. A literature search identified articles that were: related to MTM and similar nutrition programs; based in the US; related to costs, emergency department use, hospital admissions and/or other medical outcomes; and published since 2012. Out of 4,275 articles that related to MTMs, only 155 dealt even tangentially with costs or outcomes. Of those, only 6 studies used classic experimental techniques (control and treatment group) that allow costs and benefits to be accurately attributed to MTM treatment¹⁰.

The second step summarized key findings regarding the association between MTM program participation, costs and health outcomes. The six studies shared several key intervention characteristics. Diet specificity varied, with some programs custom designing meals for individual patients and others following generic healthy meal guidelines. Personalized nutrition counseling and coaching was generally guided by registered dietitian nutritionists. The number of meals per week, duration and frequency of nutrition education and coaching varied by intervention also. Interventions employing more frequent patient exchanges produced the largest reductions in hospitalizations. Cost per meal did not show any utilization or cost advantage to expensive custom diets.

Key findings are summarized in the "MTM Benefits & Patient Characteristics" table. Patients are grouped based on the type of nutritionally sensitive disease (NSD). These conditions include diabetes, congestive heart failure, myocardial infarction, other heart disease, emphysema, stroke, nonmelanoma cancer, HIV infection, and chronic kidney disease. Patients are further characterized based on payor and whether food insecurity was present. This table shows that savings are higher for patients with certain combinations of risks that put them at higher risk for hospitalization were they not to receive MTMs.

The third and final step was to build a customizable computer model to simulate costs and benefits based on different assumptions. Such flexibility allows models to be adjusted to local circumstances.

MTM Benefits & Patient Characteristics			Reduction in Hospital Admits
Patient Condition	Payor	Health Savings \$ Per Patient	
NSD, IADL	Medicaid	7,299	28%
NSD, IADL	Dual	8,630	26%
NSD, IADL, & Food Insecurity	Medicaid	10,920	41%
NSD, IADL, & Food Insecurity	Dual	7,276	21%
Diabetes & IADL	Medicaid	7,704	17%
Diabetes & IADL	Dual	9,891	26%
Congestive Heart Failure & IADL	Medicaid	7,033	31%
Congestive Heart Failure & IADL	Dual	9,197	38%

TABLE LEGEND

NSD: Nutritionally Sensitive Disease

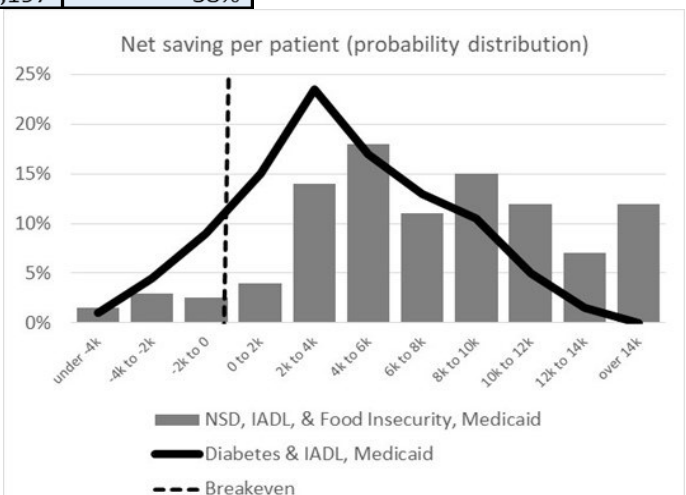
IADL: Instrumental Activity of Daily Living (i.e., cooking, transportation to shop)

Dual Payor: The patient is 'dual eligible'; covered by both Medicare and Medicaid

CONCLUSIONS AND HEALTH POLICY IMPLICATIONS

A worksheet incorporates cost and benefits expectations from prior research and allows customization based on local expectations. The expected benefits (see Table) are compared to MTM program costs. Cost component include nutritionist assessment (\$34.48), meals per week (10-21) cost per meal (\$10.64) number of months (2-12). To provide 10 meals per week for 8 months, MTM would cost \$3,440 per patient. The graph summarizes simulation

model estimates of net savings per patient, depending on patient characteristics. NSD, IADL, & Food Insecurity, Medicaid (gray bars). The slow increase lowers chances (10%) of saving less than the \$3,440 investment. Patients with diabetes, IADL and Medicaid (black line) Average expected savings for this class of patient are \$4,264. There is also a higher chance (15%) that MTM investments do not pay off.



While MTM use is still expected to provide a net cost savings for both patients, this kind of analysis highlights the importance of pairing programs with patients most likely to have higher savings. This kind of analysis can guide policies to maximize the financial and health returns on program investments.

Acknowledgements: ¹Hager et al., "Association of National Expansion of Insurance Coverage of Medically Tailored Meals With Estimated Hospitalizations and Health Care Expenditures in the US." ²Berkowitz et al., "Association between Receipt of a Medically Tailored Meal Program and Health Care Use." ³Berkowitz et al.; Palar et al., "Impact of Food Support on Food Security and Body Weight among HIV Antiretroviral Therapy Recipients in Honduras: A Pilot Intervention Trial"; Gurvey et al., "Examining Health Care Costs Among MANNA Clients and a Comparison Group." ⁴Rabaut, "Medically Tailored Meals as a Prescription for Treatment of Food-Insecure Type 2 Diabetics." ⁵Gaskin et al., "Disparities in Diabetes: The Nexus of Race, Poverty, and Place." ⁶Berkowitz et al., "Association between Receipt of a Medically Tailored Meal Program and Health Care Use." ⁷Palar et al., "Impact of Food Support on Food Security and Body Weight among HIV Antiretroviral Therapy Recipients in Honduras: A Pilot Intervention Trial." ⁸Gao et al., "The Effect of Food Is Medicine Interventions on Diabetes-Related Health Outcomes Among Low-Income and Food-Insecure Individuals." ⁹Rabaut, "Medically Tailored Meals as a Prescription for Treatment of Food-Insecure Type 2 Diabetics"; Berkowitz et al., "Association between Receipt of a Medically Tailored Meal Program and Health Care Use"; Palar et al., "Impact of Food Support on Food Security and Body Weight among HIV Antiretroviral Therapy Recipients in Honduras: A Pilot Intervention Trial"; Arksey and O'Malley, "Scoping Studies"; Levac, Colquhoun, and O'Brien, "Scoping Studies." ¹⁰Zheng and Bernet, "A Scoping Review of Research Relating to Medically Tailored Meal Outcomes and Costs."