

Reduce Healthcare Costs and Improve Patient Outcomes with Post-Discharge Meals

Business White Paper





TABLE OF CONTENTS

The Impact of Malnutrition4

Promote Faster, More Complete Recovery7

Reduce Risk of Complications9

Reduce Risk of Readmissions11

Support Patients with Poor Access to Healthy Foods14

Improves Overall Health and Quality of Life17

Decrease Further Hospitalizations Due to Injury19

Enhance Management of Chronic Disease21

Conclusion24

References.....25

Most people today are aware that medical science has accumulated a substantial body of evidence establishing strong links between good nutrition and good health. What many Americans are surprised to learn is that malnutrition is a very real problem among hospital patients in the U.S. In fact, research has shown that approximately one of every three patients admitted to hospitals is malnourished. Left untreated, about two-thirds of those patients will become more severely malnourished during hospitalization. Approximately one-third of patients who are not suffering from malnutrition upon hospital admission will become malnourished by the time they are discharged.

The purpose of this white paper is to review the body of evidence that shows how discharge meals can maximize patient outcomes while reducing healthcare costs.



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The Impact of Malnutrition

Malnutrition Has Wide Ranging Consequences

Malnutrition has far-reaching effects for patients, causing impairment on many levels. Poor nutritional status impairs the immune system, delays wound healing, causes unhealthy changes in body composition, reduces muscle strength and can decrease the function and efficiency of vital organs and systems, such as the kidneys, respiratory and cardiovascular systems, and more. Malnutrition is also associated with fatigue, apathy and depression. These effects and others contribute to poorer treatment outcomes as compared to well-nourished patients, including longer recovery times and increased risk of complications.

Malnutrition among patients also has consequences for the medical facilities that treat them, as well as health insurance companies, health plans and other stakeholders in the medical system. The effects of malnutrition can significantly increase the overall length and complexity of care in these patients, which, substantially increases the costs associated with treatment. Additionally, poor nutrition and the poorer outcomes that come with it often mean more frequent hospital visits – and in many cases, readmissions within 30 days of discharge. Of course, these factors have always had detrimental effects on hospitals and other stakeholders, but with newer reimbursement rules implemented under the Affordable Care Act that impose financial penalties for certain issues – readmissions and complications, for instance – their impact is even more pronounced today.

Nutrition Care: Maximizing Patient Outcomes And Minimizing Costs

Most of these adverse effects on patients and the health care system can be prevented or improved through nutrition care. That care is essential during hospital stays to improve short-term treatment outcomes. However, research has revealed that it is just as important, as part of effective discharge planning, to provide post-discharge meals to patients who need them. Post-discharge meals significantly impact both short-term recovery results and the long-term health of patients.

This is the chief goal of care providers and the health care industry in general. Along with better outcomes for patients come increased financial health for stakeholders. Post-discharge meals can maximize patient outcomes while minimizing costs.

“ Along with better outcomes for patients come increased financial health for stakeholders. ”

Post-Discharge Meals Promote Faster, More Complete Recoveries

Patients discharged from the hospital after serious illness or injury generally still have a lot of work ahead of them in terms of healing, recovery and rehabilitation. Weight loss during this period is common, as patients experience symptoms that can make preparing and eating nutritious meals difficult, such as decreased energy, pain, weakness, poor appetite and health-related dietary restrictions. Weight loss and poor nutrient intake can delay the healing and recovery process, resulting in longer, more challenging recoveries, and in many cases, relapse and readmission. Providing ready-made post-discharge meals to these at-risk patients has shown impressive results – according to results of a pilot study – in improving nutrition and preventing weight loss.



“ Weight loss and poor nutrient intake can delay the healing and recovery process, resulting in longer, more challenging recoveries. ”

That pilot study, performed by the Metropolitan Area Neighborhood Nutrition Alliance (MANNA), a non-profit serving the greater Philadelphia area, examined the health care expenditures and health factors of 65 MANNA clients as compared to a similar group of patients who did not receive MANNA nutrition services over a period of 12 months. The study found that mean monthly expenditures decreased for three consecutive months after services began (Figure 1), and that average costs were 31 percent lower in MANNA clients than in the comparison group, indicating fewer health problems. Other costs, such as inpatient costs, length of stay and number of hospital admissions also displayed a significant downward trend, as did discharges to sub-acute facilities, rather than to home, indicating greater health stability. According to study authors, these results help illustrate the significance of medical nutrition therapy and home-delivered meal services on overall health, helping patients to maintain a healthy body weight, withstand side effects of treatments, improve immune function, and enhance their overall quality of life.

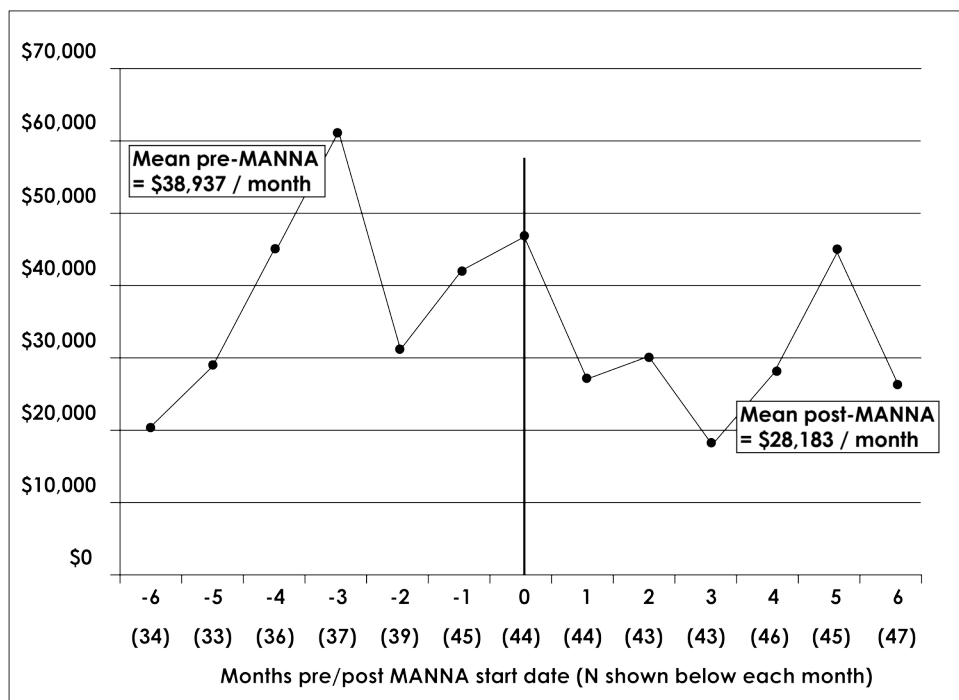


Figure 1. Average monthly health care costs of all MANNA clients 6 months prior to service and 6 months after beginning service.



Post-Discharge Nutrition Support Reduces Risk of Complications

A long list of clinical studies has shown that nutritional support throughout the hospitalization phase coupled with post-hospitalization nutrition assistance offers a significant reduction in short and long-term complications in both surgical and medical patients. According to studies cited in an article published in the *Journal of Parenteral & Enteral Nutrition* (July 2013, Tappenden, et al), common complications that can be reduced via solid, consistent nutritional intervention include infections, gastrointestinal perforations, pressure ulcers, anemia, cardiac complications, deep vein thrombosis and respiratory and urinary infections. Depending upon the particular study and type of complications, those reductions ranged from 14 to 24 percent.

Nutritional support has also been shown to significantly reduce the incidence of falls in frail, elderly patients, with some studies showing a reduction up to 60 percent. The impact of nutritional support in reducing complications shows that ensuring a wholesome, nutritious diet via post-discharge meals can be key to ensuring successful transitions from hospital to home.

Reducing complications in patients, is certainly a priority for all segments of the health care industry for the sake of the health and well-being of those patients. It is also a priority in terms of maintaining the healthy bottom line necessary to provide quality care, given the reimbursement penalties imposed by the new health care reform act for higher than average rates of certain complications.

Post-Discharge Meals Significantly Reduce Hospital Readmissions



Hospital readmissions within 30 days of a discharge are very common and troublesome issues. In Medicare patients alone – one of the easier demographics to track – readmission within 30 days occur in one of every five patients. For the patients who experience these readmissions, they generally indicate poor recovery outcomes. For both patients and health care stakeholders, readmissions significantly increase costs, and for hospitals and health systems, high readmission rates can result in financial penalties under newer Medicare reimbursement policies.

Poor nutritional status has been linked to a number of factors that are associated with poor recovery outcomes, according to Tappenden. Malnourished adults who are or recently have been hospitalized, regardless of body mass index, typically suffer from undernutrition – or insufficiencies and/or deficiencies of vital nutrients. This can often be attributed to a combination of poor appetite, induced by illness, injury or health conditions, and nutrient depletion, caused by factors that increase the body's demand for and usage of protein, energy and micronutrients, such as inflammation and infection related to those illness, injuries or health conditions, for instance.



Undernutrition is associated with many adverse outcomes, including an increased risk of pressure ulcers, impaired wound healing, suppressed immune function, increased infection risk, weight loss, muscle wasting and functional loss – which increases the risk of falls. All of these adverse outcomes are risk factors for readmission. In fact, weight loss alone, according to these authors, has been shown to correlate with a 26 percent increase in readmission risk.

Comprehensive nutritional intervention, including nutrition care during hospitalization and as part of post-discharge planning and care, has been shown to reduce readmissions significantly. According to research presented during a poster session at Hospital Medicine 2014, the Society for Hospital Medicine's annual meeting, nutritional care decreased the probability of 30-day readmission by 12% for acute myocardial infarction (AMI), and 10.1 percent for congestive heart failure (CHF), and 8.4 percent in patients with any diagnosis.

Post-Discharge Meals Provide Crucial Support to Patients with Poor Access to Healthy Foods

Food insecurity is a common problem among lower income patients of all ages. According to USA Today, it affects nearly one in six U.S. households. For many, the chief issues behind poor access to healthy foods are financial, but there are a number of other factors that contribute as well. For low income individuals, families and seniors, transportation to grocery stores can be a serious problem. For seniors and the chronically ill, decreased functional ability can make obtaining and preparing healthy foods difficult, a problem that is generally more significant as these patients are recovering from a recent hospitalization. These factors and others contribute to less than ideal dietary practices in low-income patients, which, according to a growing body of medical evidence, can have serious adverse effects on patient recovery outcomes after hospital discharge, management of chronic health issues and risk of further injury/illness, among other health issues, and contribute to increased health care costs and usage.

“ Food insecurity is a common problem among lower income patients of all ages, affecting nearly one in six U.S. households. ”



Among the many studies that examine the impact of poor access to healthy foods on health status and health care costs is one done by a University of California, San Francisco research team and published in the January, 2014 issue of Health Affairs. In this study, researchers looked into how food insecurity affected health outcomes, including risk of hypoglycemia in people with diabetes. They found that low-income diabetes patients were hospitalized more often than higher-income diabetes patients, and that risk of hypoglycemia admissions for low income patients increased by 27 percent during the last week of the month – when food budgets are more frequently exhausted – as compared to the first week of the month. Since no similar variation was seen in higher-income patients, study authors state that these results suggest that exhaustion of food budgets – and the poor diet that results – may be an important driver of increased hypoglycemia and more frequent hospital admissions among low-income people with diabetes.

Another study, published in the October, 2013 issue of Health Affairs, looks into the benefits of providing home-delivered meals to seniors. According to researchers, an increase of just one percent in the number of seniors receiving home-delivered nutritional support in 2009 could have saved state Medicaid programs over \$109 million dollars, primarily by helping more seniors to maintain healthy, independent lives at home, rather than requiring nursing home care.

These are just two of the many studies that illustrate the importance of nutrition care in patients who are malnourished or at risk of malnutrition – especially after hospital discharge, when personal circumstances, such as environmental, functional and financial issues, among others, may make access to healthful meals difficult.

Nutrition Care Improves Overall Health and Quality of Life



An overwhelming and ever-growing body of clinical evidence proves that solid, well-balanced nutrition is essential to health, and that inadequate nutrition has adverse health effects. These basic facts apply to everyone, but the effects of poor nutritional status are particularly pronounced in people who have recently been hospitalized and are recovering from acute illness or injury, a cardiovascular event, or an exacerbation of a chronic health condition. Ensuring proper nutrition in these medically vulnerable patients via post discharge meals, promotes faster healing, improves strength and functional ability, lowers risk of complications and reduces risk of health deterioration after discharge that can lead to unexpected readmissions. Better recoveries, fewer complications and less chance of the need for another hospital stay means healthier patients, and better overall health means better quality of life.



Post-Discharge Meals Decrease Odds of Further Hospitalizations Due to Injury

Patients who have been discharged from the hospital are generally functionally compromised to some degree. Illnesses, injuries or other health events significant enough to require inpatient treatment generally inflict a toll on overall health and well being that may cause symptoms that include fatigue, weakness, depression, anxiety, weight loss and muscle wasting, issues that typically continue well into the post-discharge period. Patients who have been hospitalized for serious injuries or stroke may have mobility challenges – temporary or permanent – that make them dependent upon crutches, canes, walkers or other mobility aids to get around. Newly prescribed medications, especially strong pain medications, can cause nausea, drowsiness or dizziness. Compounding these issues is the fact that a large percentage of patients leave the hospital in a malnourished state, which can worsen many of these symptoms. Any or all of these issues increase the risk of falls and injuries, especially in patients who have little or no help at home during this difficult period.

Home delivered post-discharge meals can reduce that risk in two basic ways. First, as shown in study after study, including many cited here, optimizing nutrition during hospitalization and the post-hospital period speeds healing and recovery, helping patients regain strength, energy and functional ability more quickly than patients who do not receive nutritional care. Second, patients who have the benefit of home-delivered, ready made meals during their recovery period are spared the risk of falls and injuries that can occur as they fend for themselves – despite their impairments – in the kitchen preparing meals.

Home-Delivered Meals Enhance Management of Chronic Disease

Managing chronic diseases and conditions – such as diabetes, cancer, heart disease, stroke, arthritis and obesity – to enable the highest possible level of health and well-being in patients and the lowest possible risk of complications, disability and death is one of the most important and challenging aspects of health care today. It is also the most expensive. According to the CDC, 86 percent of all health care spending in 2010 was for people with one or more chronic conditions, and the direct medical costs of just two of these conditions, heart disease and stroke, totaled an estimated \$193.4 billion, while direct medical costs associated with diagnosed diabetes in 2012 came in at an estimated \$176 billion. Estimated direct medical costs of arthritis in 2003 were \$47 billion.

Home-delivered post-discharge meals and chronic disease management meals have been shown to improve results in terms of managing chronic diseases and conditions, significantly improving health and well-being of patients and decreasing their medical costs. These benefits were illustrated in the previously mentioned pilot study performed by MANNA and published in the *Journal of Primary Care & Community Health*. MANNA compared health outcomes and medical costs of two groups of individuals with chronic health diseases and conditions – one group made up of individuals receiving nutritional services, including home-delivered meals and nutritional counseling, and the other group consisting of patients who did not receive nutritional services.



The results of that comparison were very significant. Patients who received nutritional care had lower medical costs and fewer hospitalizations. Monthly medical costs for patients receiving nutritional care averaged \$28,000 for MANNA clients, as compared to an average of \$41,000 for patients who did not receive nutritional care. The nutritional care group also experienced fewer hospital admissions than the comparison group, and when these patients were admitted to a hospital, length of stay was shorter and treatment costs lower.

Conclusion

The bottom line of all the information outlined in this paper about post-discharge meals, is that addressing the needs of malnourished patients during inpatient care is a good start towards maximizing patient outcomes and minimizing health care costs, as well as complying with new ACA care regulations and benchmarks that can affect reimbursement levels. However, **extending nutritional care into the post-discharge period, and in many cases beyond that period, offers better results for both patients and health care stakeholders, including hospitals, integrated health systems and health insurers.** Given the proven benefits for all involved, its no surprise that hundreds of U.S. hospitals, many large health systems and a growing number of health insurance plans are implementing and/or approving post-discharge nutrition for the patients they serve.

Health plans that add post-discharge meals and chronic disease management meals to their supplemental benefits have seen an ROI of up to 3-to-1.

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