



Integrated Role Of Nutrition Post-Hospital Discharge: Summary Of A Scientific Roundtable Discussion

SUMMARY

A roundtable discussion was organized by Abbott Nutrition on November 4, 2014 to discuss how nutrition care can be integrated in post-discharge care. This report summarized opinions from leaders in nutrition and healthcare, who presented the current healthcare landscape, examined challenges in post-discharge care, and highlighted the importance of standardized policies for nutrition care in improving health outcomes and reducing healthcare costs. U.S. and global Initiatives and efforts from interdisciplinary healthcare teams, such as the Alliance to Advance Patient Nutrition and the feedM.E. (Malnutrition Awareness and Medical Education) Global Study Group, to address malnutrition and enhance nutrition care for patients in the hospital and community were discussed. In these initiatives, use of oral nutritional supplements (ONS) has been demonstrated as an evidence-based cost effective nutrition intervention for different patient populations. In patients with diabetes, glycemia-targeted specialized nutrition (GTSN) was a successful nutrition therapy in improving patient outcomes and reducing healthcare costs. In summary, nutrition policies by multi-disciplinary coalitions addressing malnutrition should be made to improve patient care in the current healthcare environment. Barriers including the lack of awareness, time, resource, and training should be appraised for successful implementation of standardized nutrition policies.

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INTRODUCTION (Robert Miller, PhD)

With tremendous amount of efforts to improve efficacy of patient care and reduce post-discharge complications and readmissions, value of quality nutrition care needs to be re-emphasized. Abundant literature has shown that neglect of nutrition is associated with a variety of worsened clinical outcomes across the care continuum and higher costs of care.¹⁻³ Higher incidence of complications, readmission and mortality rates and healthcare costs have been observed consistently in malnourished patients.⁴ Inadequate nutrition intervention during and post hospitalization has been associated with worsened clinical outcomes and mortality in those patients.⁵ Unfortunately, malnutrition continues to be largely unrecognized among hospitalized patients despite the availability of various screening and assessment tools. Patients' nutritional status is not improved at hospital discharge; continued nutrition intervention is required post discharge. Thus, prevention and treatment of malnutrition across the continuum of care and into the post-hospital setting represent a tremendous opportunity to improve quality of patient care and clinical outcomes, and reduce costs.

POST-HOSPITAL HEALTHCARE CHALLENGES (Karim Godamunne, MD, MBA, CMO)

The healthcare landscape has entered a period of rapid change not seen in many years. There is now an intense focus on both quality and cost, driving dramatic changes in the healthcare model in the U.S. Collectively, these quality and cost drivers are known as "pay-for-performance" models of care. Value-based purchasing, bundled payments, and accountable care organizations are key examples of pay-for-performance models that promote this new healthcare dynamic. These pay-for-performance models are designed to reward behavior, promote coordination, and impose costs if quality goals are not met.^{6,7} While initially focused on the acute care hospital, these pay-for-performance models are being embraced in outpatient settings, including long-term care providers and physician groups. Underpinning this new healthcare paradigm is the ability to use new web-based technologies to allow for transparency of care and electronic documentation, which in turn allow for use of analytic tools (data mining) to assess the impact of pay-for-performance at the population level.^{6,8} Along with the development of these new incentives, there have been dramatic changes in physician practice patterns. A key change has been the explosive growth in the use of hospitalists - physicians who typically provide hospital-based care only. There are now over 44,000 hospitalists and they provide care for over 70% of hospitalized Medicare patients. There is also a growing number of physicians who are now employed and this shift away from self-employment will likely continue.^{9,10} These two fundamental changes in physician practices create a large and growing base of physicians whose services may be more strongly aligned with pay-for-performance models.

Unfortunately, while malnutrition has been recognized as a key prognostic factor of the outcomes of both chronic and acute diseases, nutrition is rarely represented in quality incentives in pay-for-performance-models, especially in the immediate post-hospital setting.¹¹ Furthermore, there are now many more transitions of care than in the past, resulting in increased care fragmentation. Transitions of



care are widely regarded as high-risk points for care breakdowns and this includes an appropriate nutrition hand-off from inpatient to outpatient setting. This situation is exacerbated by a lack of documentation of malnutrition in the hospital setting. Few physicians are trained to appropriately capture malnutrition as a diagnosis in the hospital setting.¹² Additionally, malnutrition continues to be a challenge in the post-hospital setting.¹³ There is a profound disconnect between the nutrition science that supports the need to markedly improve care (both identification, early intervention, and ongoing intervention) of malnourished hospitalized patients and the recently developed pay-for-performance models which do not have nutrition-related incentives and costs.

In this rapidly evolving healthcare landscape, quality goals need to be developed that include the identification and early treatment of malnutrition to address malnutrition. Where possible, these goals should emphasize outcomes. Quality goals can be systematically effective if developed through national policy changes. Education must be offered on platforms utilized by key providers – targeting groups that are more aligned with incentives, such as hospitalists. Tailored quality improvement projects focusing on nutrition need to be developed and be supported by a mentor base that can help projects succeed. Electronic medical records and data mining can be leveraged to assess and track both the intervention and outcome results. While there has been an under-appreciation of nutrition-related issues in the healthcare system, the rapid changes in the U.S. healthcare model provide an opportunity to effectively address this critical problem.

PROJECTS TO REDUCE READMISSION RISKS (Luke Hansen, MD, MHS)

Nearly 20% of Medicare fee-for-service patients are re-hospitalized within 30 days of discharge.¹⁴ However, evidence suggests that as many as three-quarters of such re-hospitalizations are avoidable.¹⁵ A better understanding of the causes and possible preventative measures of hospital readmissions can reduce patient suffering.

The hospitalization and the post-hospitalization period are unfortunately characterized by functional deterioration and often increased functional demands in emotional, physical and cognitive domains.¹⁶⁻²⁶ Studies indicate that poor function in these domains is associated with longitudinal geriatric healthcare utilization, and an emerging literature suggests an association with short-term re-hospitalization. Unpublished observational data from our team indicates a re-hospitalization odds ratio of 1.8 among geriatric patients whose physical function is below average at discharge compared to those with physical function above average, suggesting that maintenance of physical function is key to optimizing wellness after discharge.

Review of interventions to reduce avoidable hospitalization demonstrates that multiple opportunities exist to intervene during and after hospitalization to reduce risk.²⁷ These opportunities can be categorized as pre-discharge, post-discharge, and bridging across the care transition. Pre-discharge opportunities include patient education, discharge planning, medication reconciliation, and appointment-scheduling prior to discharge. Post-discharge opportunities include timely clinical follow up (recommended within 72 hours), timely transmission of clinical discharge summary to primary care, follow-up phone calls to patients after discharge, patient hotlines in case of post-discharge questions, and home visits. Perhaps the most promising set of interventions are bridging methods that include a transition coach.^{28,29} The efficacy of these interventions is largely due to their support of the longitudinal relationship between patients and care providers across the care transition.



Furthermore, recent analysis has indicated that multifaceted interventions, including many of the above interventions, are more likely to be effective.³⁰ Implementation of a multidimensional, bridging intervention is a formidable undertaking. A robust program is likely to include changes in workflow, both electronic and logistical, as well as potential new care team roles and responsibilities.

Project BOOST (Better Outcomes by Organizing Safe Transitions) is a national quality improvement program designed to facilitate successful implementation of best practices for hospital-based care transitions through intervention, technical support, and peer support. The BOOST toolkit consists of many of the practices listed above as well as an emphasis on individualized risk assessment and tailored application of services. In addition to the implementation of specific care tools, the BOOST intervention also hopes to improve patient care culture around discharge. This culture change is facilitated via the “teach back” method of patient education, in which patient mastery of discharge information is confirmed by engaging the patient in active description of their own discharge and medication instructions.³¹ The BOOST intervention is guided by an external physician mentor, whose expertise is in both care transitions content and management. In the first study of the intervention, it was reported that the hospital unit in which Project BOOST was implemented experienced a two percent absolute reduction in readmission rates over one year compared to same hospital units not using BOOST.

This intervention and others present an opportunity to improve performance in avoidable re-hospitalization, improving patients’ wellness and improving the healthcare system overall.

GLOBAL INITIATIVES TO ADDRESS MALNUTRITION (Kelly Tappenden, PhD, RD)

The prevalence of malnutrition ranges up to 50% among patients in hospitals worldwide, and disease-related malnutrition is all too common in long-term and other healthcare settings as well. The prevention and treatment of malnutrition across the continuum of care presents a tremendous opportunity to improve quality of patient care, improve clinical outcomes and reduce costs.

Regrettably, malnutrition continues to go unrecognized and therefore untreated - in 2010, only 3.2% of patients discharged from U.S. hospitals had a diagnosis of malnutrition.¹² Without this diagnosis, over one-third of patients experience lean body mass loss during a one-to-two-day hospital stay, and many patients continue to lose weight after discharge.^{32,33} Nutrition intervention in malnourished patients can yield the following positive results: 28 percent reduction in avoidable readmissions, two day reduction in average length of stay, 25 percent reduction in pressure ulcer incidence, and fourteen percent reduction in overall complications.³⁴⁻³⁸ To help reduce the toll of malnutrition by improving nutrition care provided to our patients, the following two groups have presented a call-to-action for healthcare givers to increase the quality of nutrition care provided to patients: the Alliance to Advance Patient Nutrition (<http://malnutrition.com/>) and the feedM.E. Global Study Group (<https://nutritionmatters.com/>). Both groups emphasize that the key to success is to systematically identify malnourished or at-risk patients and promptly intervene.

The Alliance to Advance Patient Nutrition proposes a novel care model to drive improvement in U.S. healthcare teams by emphasizing the following six principles: (1) create an institutional culture where all stakeholders value nutrition, (2) redefine clinicians’ roles to include nutrition care, (3) recognize and diagnose all malnourished patients and those at risk, (4) rapidly implement comprehensive nutrition interventions and continued monitoring, (5) communicate nutrition care plans, and (6) develop a comprehensive discharge nutrition care and education plan.¹



Tackling malnutrition on a global basis, the feedM.E. Global Study Group includes members from Asia, Europe, the Middle East, and North and South America. The feedM.E. strategy defines a Nutrition Care Pathway that is simple and can be tailored for use in varied healthcare settings. The flexible nature of this strategy allows for successful implementation, given the diversity in healthcare delivery and resources across the globe and utilizes tailored regional deployment. The Pathway recommends screen, intervene, and supervene: *screen* patients' nutritional status on admission or initiation of care, *intervene* promptly when needed, and *supervene* or follow-up routinely with adjustment and reinforcement of nutrition care plans.³⁹

Collectively, these two initiatives offer solutions for tackling healthcare-related malnutrition on a national and global scale.

ROLE OF NUTRITION IN THE DISCHARGE CARE: NURSING PERSPECTIVE (Andie Melendez, MSN, RN)

Nutrition has come to the forefront of healthcare, and effective nutrition intervention must occur across all settings and transitions of care. With the increasing limitations to reimbursement for chronic conditions, clinicians must explore the root causes for failure to recover, increased infection, and skin integrity breakdown resulting in readmission. Processes to enhance timely recovery and better patient outcomes must be identified. Research has shown that effective hospital nutrition programs and raising awareness surrounding adequate patient nutrition results in improved patient outcomes.^{35,37}

Current healthcare statistics reflect that malnutrition results in higher risk of infections, delayed wound healing, worsened activity, prolonged length of stay, readmission, morbidity and mortality, and overall cost. Approximately 50% of patients admitted to the hospital are malnourished when they arrive.³⁶ Malnourished patients are twice as likely to develop a pressure ulcer in the hospital, three times more likely to develop a surgical site infection, and hospitalized an average of two days longer if untreated.^{35,37,40} Additionally, almost half of patients who fall in the hospital are malnourished.⁴¹

Nutrition has not historically been prioritized at patient discharge from acute care, and many patients with malnutrition are sent home with no follow up, resulting in complications and in many cases, readmission. The data demonstrate that assessment is not always thorough and patients do not always get a most needed nutrition consult due to poor screening at admission. Most organizations have but a few registered dietitians, and the responsibility of the nursing staff is huge. Staffing patterns do not always allow for adequate intake history in relation to nutrition. Electronic medical records (EMRs) are not optimized for assuring timely and efficient referral to the nutrition team, and the focus on early discharge and short length of stay (LOS) does not allow for effective nutrition discharge plans. Nursing understands the value and importance of nutrition intervention, but often lacks the resources and tools to integrate a solid nutrition plan into the plan of care.

The Alliance to Advance Patient Nutrition has identified six principles to address patient nutrition. The sixth principle encompasses development of a nutrition care and education plan with counseling included in the discharge plan.¹ A poll was given to nurses attending the Academy of Medical Surgical Nurses (AMSN) 2014 National Convention to determine current practice surrounding nutrition focus at patient discharge from acute care. The results were alarming, with 43.5% of respondents not consistently incorporating nutrition into the discharge plan, 75% stating that they do not have clear methods of



identifying and referring at-risk patients during the inpatient stay, and 84% lacking nutrition information in the discharge plan.⁴²

The evidence shows that instituting an effective hospital nutrition program and raising awareness of the issue of patient nutrition lead to better patient outcomes.^{35,37} The time is now to enhance existing care practices to improve team coordination and quality outcomes from admission through discharge. Nurses need to be empowered to provide nutrition education, outpatient instructions and other resources. Discharge planning must include referral to community resources, hardwired referrals to outpatient nutrition counseling centers or registered dietitians in post-discharge care settings, and nutrition education for the patient and family. Nursing must identify opportunities to maximize nutrition optimization, and enhance the EMR to capture quality information to optimize nutrition support. Quality outcome measurement is imperative to validate the impact of effective nutrition on reducing the risks and enhancing recovery. The time is now to partner for outcomes and demand prioritizing nutrition not only at admission to the acute care setting, but also in discharge planning to flow through the continuum of care.

ORAL NUTRITIONAL SUPPLEMENTS AND HOSPITAL READMISSION (Maria Isabel Correia, MD, PhD)

Hospital readmission has been the focus of various publications as well as with economic analyses. Although registered administrative data on readmission reasons are considered controversial and inaccurate, there is no doubt that readmission poses a huge burden to the health system not only in the U.S. but also worldwide.⁴³

Readmission encompasses both medical and surgical patients. Recent policy changes have imposed substantial financial penalties to those hospitals that do not address hospital-associated complications that may be the cause of readmissions. Because economic aspects are at stake, several hospital readmission reduction programs have been developed. These have primarily addressed patients with certain medical diagnoses, such as those with chronic diseases. However, just recently, these programs have been expanded to orthopedic surgery and will likely involve more surgical procedures in the near future. Nevertheless, the accepted definition for any organization tracking re-hospitalization considers the 30-day all-cause hospital readmission.⁴⁴

Among general surgery patients, failure to thrive or malnutrition appears as the third cause of hospital readmission (10.4% of the cases). Older age has also been directly associated with hospital readmission, and particularly so in more self-neglected individuals.⁴⁵ Therefore, the key question is: Who are these patients? Most studies have shown that aside from surgery, older age and other risk factors, including chronic diseases (eg, cancer, COPD, renal disease) and drug addiction, are related to hospital readmission.⁴⁴ Despite the different diseases, all of the patients share one feature: malnutrition. This commonality is due to the fact that a sick person does not eat, does not move, and above all has inflammation. Thus, disease impacts food intake and body composition, leading to a malnourished state that needs to be identified at early stages.⁴⁶ Malnutrition and hospital readmission share several risk factors: cancer, infection, longer hospital stay, and chronic clinical diseases.⁴⁷⁻⁴⁹

Many initiatives have been launched in the U.S. to address this problem. Recently, the Agency for Healthcare Research and Quality published the *Hospital Guide to Reducing Medicaid Readmissions* to address initiatives that might help handle such burden.⁵⁰ A review of the guide for nutrition health initiatives yielded scarce results, with a single reference to nutrition within "nutrition assistance" that

referred to identifying partners that could tackle the initiative. However, there were 12 citations to the role of food, mostly related to food insecurity. Although nutritional status and hospital readmissions are intertwined in a direct causal fashion, there is a huge discrepancy between what is known and what is practiced: lack of knowledge translation!

As previously mentioned, several risk factors are associated with malnutrition and most of them cannot be changed by healthcare professionals. However, improving food provision by providing good hospital food service and more generally promoting medical awareness on disease-related malnutrition will certainly impact outcomes.⁴⁸ The feedM.E. initiative is one such effort that has been developed to accomplish this. After having identified those at risk of malnutrition, appropriate strategies, and in particular nutrition therapy, need to be implemented.³⁹

Oral diet and ONS are the least invasive strategies for increasing food intake. Several studies have shown these methods increase energy and protein intake as well as improve patient outcomes by decreasing rates of pressure ulcers and improving digestive and intestinal function among elders. The provision of ONS has also been associated with decreased risk of overall postoperative complications, decreased risk of infectious complications, shorter length of hospital stay, and reduced mortality rates.^{38,51-54} Kabata and colleagues showed that preoperative ONS improved laboratory markers and decreased complications.⁵⁵ A recent meta-analysis showed that the use of ONS was associated with decreased hospital readmissions.⁵⁶ The impact of such outcomes is directly related to the costs of healthcare, as portrayed in recent literature.⁵⁷ Therefore, it is of utmost importance that these nutritional aspects be addressed when treating patients at risk.

Furthermore, patients should also be part of the treatment process. Research shows that patients are eager to learn about the nutrition-related aspects of their clinical status, highlighting the need to launch initiatives that also educate patients and families.⁵⁸

If causality is once more addressed, there are irrefutable data to show how important nutrition is in regards to individual health outcomes.^{39,48,59} Addressing this issue through ONS can improve both patient outcomes and reduce costs.

COMMUNITY MALNUTRITION AND THE ROLE OF NUTRITION INTERVENTION (Marian A.E. de van der Schueren, PhD, RD)

While malnutrition is a prevalent syndrome among hospitalized patients, the absolute number of malnourished patients is highest among community-dwelling persons.

In the Netherlands, screening and treatment of malnutrition in the hospital setting has become mandatory, with more than a million patients being screened every year at admission to the hospital. In the community, screening and treatment have fallen behind, but decreasing hospitalization time and increasing homecare call for malnutrition screening in this setting as well.⁶⁰

Two recent trials performed by the Schueren group in the Netherlands illustrate the importance of strict supervision of malnutrition treatment in the home situation. A three month post-discharge nutrition intervention, which included energy- and protein-enriched diet, ONS, calcium-vitamin D supplementation, and nutrition counseling by one dedicated dietitian resulted in an increase in body weight, a cost-effective decrease in functional limitations, and a 60 percent decrease in falls. Adherence to the protocol was

overall high as more than 80 percent of the patients followed the supplement prescriptions and answered phone calls.⁶¹ In contrast, a subsequent study of similar design was overall negative. Patients were screened for malnutrition during a flu vaccination program and referred to a dietitian after identification of malnutrition. Compared to patients in a control group, patients referred to dietitians did not have superior outcomes.⁶² Possible explanations for differing results between the two studies include an inability to quantify dietitian adherence to the protocol, unmet goals for nutrition treatment, a lack of patient initiative in scheduling visits to the dietitian, and an inability to quantify patient compliance.

To improve the results of malnutrition treatment in the community, the Dutch Malnutrition Steering Group has launched a stepwise program to identify and improve transition between different care settings. The first step is identifying barriers and enablers for transfer of care between hospital and community dietitians. Preliminary results indicate that there is a lack of familiarity between hospital and community dietitians, that the transition of care is hindered by privacy regulations, and that community dietitians lack experience regarding specific nutrition interventions, such as tube feeding (<http://www.fightmalnutrition.eu/>).

Treatment of malnourished patients in the homecare situation can be cost-effective with strict adherence to protocols. To improve nutrition treatment across care settings, training of community dietitians, along with general practitioners and nurses, is necessary so that transfer procedures can be simplified, standardized, and in line with reimbursement regulations.

THE ROLE OF GLYCEMIA-TARGETED SPECIALIZED NUTRITION (GTSN) IN THE MANAGEMENT OF PREDIABETES AND DIABETES IN HOSPITAL AND POST DISCHARGE (Osama Hamdy, MD, PhD)

Glycemia-Targeted Specialized Nutrition (GTSN) is a complete and balanced nutritional supplement used as a meal/calorie replacement for weight loss and improved glycemic control in the management of prediabetes and diabetes. GTSN can replace or supplement meals, partial meals, or snacks as an integral component of Medical Nutrition Therapy (MNT).

Compared to standard care, diabetes-specific formulas are associated with improved glycemic control in both short- and long-term use. Recent data shows that GTSN used in oral or enteral nutritional formulas not only decreases postprandial blood glucose levels and glucose variability, but also reduces insulin usage for patients with diabetes.⁶³ GTSN as part of comprehensive lifestyle management programs has also been associated with significant reductions in weight, improvement in lipid profile, and blood pressure in patients with diabetes.⁶⁴

The benefits of GTSN arise from the mechanism of digestion. GTSN formulas contain slowly digested carbohydrates, which reduce glucose spikes after meals.⁶⁵ The efficacy of GTSN may be derived from the impact of nutrients on gastrointestinal hormones, including glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic peptide (GIP). Several studies have shown that GTSN increases GLP-1 in comparison to standard formula or meal of same caloric content. This change in GLP-1 levels may explain the effect of GTSN on body weight and glycemic control.⁶⁶⁻⁶⁸

Malnutrition is also prevalent among patients with type 2 Diabetes.⁶⁹ As a result, patients with diabetes lose lean muscle mass as they age, especially if diabetes is poorly controlled or undiagnosed.⁷⁰ Most elderly obese patients with type 2 diabetes who are hospitalized are either malnourished or at risk of



malnutrition.⁷⁰ Use of GTSN in hospitals for either oral or tube feeding has been associated with reduction in LOS and hospitalization cost in this population.⁷¹

Thus, the postulated value of GTSN for discharged patients with diabetes is high. GTSN provides balanced nutrition, including essential macronutrients and micronutrients while supplementing or replacing calories. GTSN improves glycemic control by reducing the need for insulin, reducing glucose variability, and inducing GLP-1. Finally, GTSN may prevent loss of lean muscle mass, reducing weakness and fatigue, improving quality of life, and preventing sarcopenic obesity.⁷¹ This successful nutrition therapy may serve as a template for nutrition interventions in other clinical populations.

CONCLUSION (Refaat Hegazi, MD, PhD)

The rapidly evolving healthcare landscape presents the optimal opportunity to address malnutrition across the care continuum. Certainly, healthcare leaders have made some headway in defining malnutrition, organizing education and awareness programs, and promoting multidisciplinary involvement. In fact, an example of a successful nutrition intervention is illustrated in medical nutrition therapy for diabetes.

Despite efforts to bring attention to nutrition in healthcare, there is still much room for improvement. Malnutrition continues to be globally prevalent and may be attributed to the lack of a consensus definition for malnutrition, incentives for physicians, nutrition protocols for nurses, nutrition education for physicians and clinicians, standardized nutrition policies, adherence to nutrition interventions, and follow-up care on nutrition. Domains for further improvement have been identified as follows:

1. Published evidence from large clinical trials that illustrates the impact of nutrition improving patient outcomes and reducing healthcare costs
2. Educational modules about nutrition for healthcare providers, patients, and the families of patients
3. Standardized policies for malnutrition screening upon hospital admission
4. Appropriate validation of criteria for malnutrition diagnosis
5. Standardized policies for nutrition therapy that are outcome-focused and promote continuity of nutrition care
6. Incentives for healthcare providers to incorporate nutrition in standard care procedures
7. Evaluations of adherence to nutrition therapy guidelines by both caregivers and patients and the efficacy of these guidelines

As demonstrated by leaders from a variety of healthcare fields, the importance of nutrition across the entire care continuum is undeniable. This issue has gained momentum, but only the widespread implementation of standardized nutrition policies will allow for the eradication of nutrition-based healthcare deficits.

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