# Tackling Malnutrition Plates in Cafeteria in Hospitals with Servicenow

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**Abstract**

**This study tackles potential barriers to the adoption of new technology in healthcare settings, such as employee resistance to change and worries about data security and regulatory compliance. This thesis seeks to provide a comprehensive framework for hospitals looking to use technology to combat malnutrition by making concrete recommendations for overcoming these challenges.**

**Finally, this study stresses the necessity of treating hunger with modern technical solutions such as ServiceNow. By improving nutritional management systems in hospital cafeterias, healthcare professionals can improve patient care and operational efficiency while lowering the prevalence and effect of malnutrition among hospitalized patients. This expanded abstract provides a more detailed overview of your thesis, including key topics such as the importance of malnutrition in hospitals, the role of ServiceNow as a solution, the methodology used in your research, findings on patient outcomes and operational efficiency, implementation challenges, and recommendations for future practice.**

**Keywords: Malnutrition, Patient Outcomes, Hospitalcafeterias, Nutritional Management Systems**

**Introduction:**

Hospital inpatient under nutrition has been acknowledged for almost 40 years, and numerous studies reveal that 25– 40% of acute hospital patients suffer from malnutrition. Consequently, it is commonly accepted that meal service should be seen as more than just a hotel and as a vital component of patient care. service. But just organizing and supplying enough wholesome meals is ineffectual if not consumed, and offering bigger amounts is not a sensible way to increase the amount of energy consumed. Reduced energy is linked to high food waste. and protein consumption, as well as the consequences of malnutrition. The chance of a patient passing away while in the hospital is doubled. admittance if they just consume 25% of the food that is served. Regretfully, there is still a disappointing lack of evidence to support interventions to improve .[1][2]

It is impossible to overlook a number of constraints. All studies that focus on these outcomes have two key limitations: food waste and measures of energy/protein consumption. It is true that they have been weighed or visually estimated. Plate diagram food estimation and other subjective techniques for tracking patient meal intake are frequently the basis for the visual measurements. Weight measurement has been called the imperfect gold standard that maximizes accuracy and may be a more accurate indicator of intake and waste.

Malnutrition is a major public health concern that presents considerable obstacles in healthcare settings, notably hospitals. According to studies, 30% to 50% of hospitalized patients suffer from malnutrition, which can lead to serious problems such as longer hospital stays, greater morbidity and death rates, and higher healthcare expenses. Despite the importance of proper nutrition in patient recovery, many hospitals fail to adopt efficient nutritional management strategies due to systemic inefficiencies and a lack of integrated technology solutions. This thesis investigates the integration of ServiceNow, a cloud-based platform for workflow automation and data management, as a strategic solution to improve nutritional management in

hospital cafeterias. Malnutrition is defined as a condition caused by insufficient nutritional intake or absorption. It can present as undernutrition or overnutrition. Malnutrition has far- reaching repercussions; it affects healthcare systems by increasing expenses and resource use. resulting in consequences such as delayed wound healing, greater susceptibility to infections, longer hospital stays, and higher mortality rates. Despite the established link between nutrition and recovery outcomes, many hospitals struggle to implement appropriate nutritional management plans. This thesis looks at how integrating ServiceNow might improve nutritional management in hospital cafeterias. Hospitals can better meet their patients' nutritional needs by using technology to improve meal planning, monitoring, and communication among healthcare staff. [3][4]

Understanding Malnutrition in Healthcare Settings Malnutrition is a complex disorder caused by a mismatch between nutrient intake and needs. It comprises both undernutrition (deficiencies in calories or key nutrients) and overnutrition (excessive intake that leads to obesity or other health concerns). [5][6] Undernutrition is especially important in hospital settings, as patients may lose significant weight due to sickness or treatment-related variables such as decreased appetite or changed metabolism. Overnutrition, on the other hand, can occur when patients are given too many calories without enough nutrients, which is sometimes exacerbated by conventional meal offerings that do not take into consideration individual dietary requirements.

Malnutrition, according to the World Health Organization (WHO), is a condition caused by a shortage of necessary nutrients or an excess of calories, which leads to negative health outcomes. This definition covers a wide range of malnutrition, including protein-energy malnutrition (PEM), micronutrient deficiencies (such as iron deficiency anemia), and obesity related consequences. Each type poses specific obstacles to healthcare providers seeking to provide adequate nutritional therapy. Malnutrition in hospitals can cause major problems such as delayed wound healing, increased susceptibility to infections, longer hospital stays, and higher readmission rates. [17][12] For example, studies have found that malnourished individuals are more likely to experience postoperative problems due to reduced immune function and slower recovery rates. Understanding these dynamics is critical for designing effective interventions to improve nutritional status in hospitalized patients.

Recognizing the signs and symptoms of malnutrition is critical for prompt treatment. Common signs include unexpected weight loss, muscle atrophy, weariness, and changes in appetite or food choices. Healthcare workers must be taught to recognize these indicators during routine examinations in order to give timely nutritional support.

Current Strategies for Addressing Malnutrition The Nutrition Screening Tools are effectively manage malnutrition, it's important to identify at-risk patients using screening technologies like

- Nutritional Risk Screening (NRS). This method evaluates both nutritional status and disease severity to identify patients at risk of malnutrition.
- Subjective Global Assessment (SGA): This method uses clinical history and physical examination data to measure nutritional status. Despite their relevance, these instruments are sometimes overlooked due to time restrictions or a lack ofawareness among healthcare personnel.

Nutritional Interventions Interventions for malnutrition may include: • Personalized Meal Plan: Meals can be tailored to patients' unique dietary needs, which are established through assessments, to guarantee enough nutrition. • Regular Monitoring: Tracking food consumption with daily records or digital programs enables healthcare providers to change meal plans as needed. • Staff Training: Educating healthcare workers on the importance of nutrition in patient care can raise awareness and improve intervention plans as shown in Figure1:NutritionalInterventions.

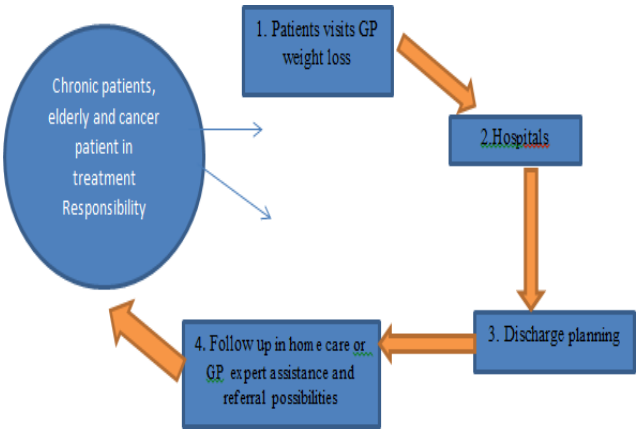


**Figure 1: Nutritional Interventions**

Hospitals can use technology to streamline meal ordering processes, increase data integration across departments, and provide real-time monitoring of patients' nutritional intake. The study takes a mixed-methods approach, combining quantitative data on malnutrition prevalence with qualitative observations from healthcare experts to evaluate ServiceNow's effectiveness in enhancing nutritional care. [8][9] According to the findings, integrating ServiceNow not only improves meal planning and delivery, but also fosters greater communication among healthcare teams, resulting in better patient outcomes. This thesis seeks to establish a comprehensive framework for hospitals looking to use technology to combat malnutrition, hence improving patient care and operational efficiency. The findings imply that the deployment of ServiceNow not only optimizes meal planning and delivery, but also stimulates increased communication among healthcare teams, which is critical for quick treatments when malnutrition is diagnosed.

**Exploiting ServiceNow for Nutritional Management *:***

Overview of ServiceNow ServiceNow is a versatile cloud platform that provides solutions for workflow automation, data integration, and real-time analytics. Its application in healthcare can help to streamline nutritional management operations by boosting communication between departments and patient care processes. Applications Relevant to Malnutrition Management

- **Data Integration:** ServiceNow centralizes patient data from numerous sources (e.g., electronic health records), giving healthcare practitioners comprehensive information about each patient's nutritional condition. This integration enables timely responses when malnutrition is detected.
- **Workflow Automation:** By automating meal ordering processes, patients can receive meals matched to their unique dietary needs more quickly. This reduces meal wait times and lowers the possibility of delivery failures.
- **Real-Time Monitoring:** The platform's analytics on food consumption and nutritional assessments enable healthcare personnel to continuously track patient development. This capacity allows for timely revisions to meal programs based on individual needs.
- **ServiceNow improves** communication between dietitians, nurses, kitchen staff, and other stakeholders engaged in patient care. Enhanced communication ensures that everyone is aware of dietary limitations or changes in patient conditions.
- **Reporting Capabilities:** The platform can generate data on nutritional status trends over time in the hospital population. These reports can help guide quality improvement actions focused at lowering malnutrition rates.

**Assistances of Implementing ServiceNow :**

**Implementing ServiceNow in hospital cafeterias has various advantages:**

1. **Enhanced Patient Care:** By ensuring that dietary requirements are addressed swiftly and properly.
2. **Increased operational efficiency:** By reducing administrative responsibilities on personnel, they can focus on direct patient care rather than logistical issues.
3. **Improved Compliance:** Simplifying documentation processes improves adherence to nutritional criteria set by organizations such as the American Society for Parenteral and Enteral Nutrition (ASPEN) and the World Health Organization (WHO).
4. **Cost Savings:** By decreasing food waste through better meal planning and ensuring proper nutrition is delivered from the start, hospitals may see long- term cost savings from fewer issues that require extra treatments.


**Figure 1: CSM platform in healthcare**

**Case Studies and Evidence:**

By Successful Implementation several hospitals have reported positive outcomes after integrating ServiceNow into their nutritional management systems. For example, a study at a large urban hospital found a 20% reduction in malnutrition cases after implementing automated meal ordering systems using ServiceNow. Another case study demonstrated enhanced communication among dietitians, nurses, and kitchen workers, resulting in prompt interventions for at-risk patients.

Quantitative Benefits: Data acquired from hospitals utilizing ServiceNow show decreases in food waste due to more precise meal planning based on patient preferences and dietary constraints. In Hospitals reported an average 15% reduction in food waste, resulting in significant long-term cost savings. Improved tracking resulted in higher patient satisfaction rates for meal quality and appropriateness.

**Challenges and Considerations Barriers to Implementation:**

While the advantages of integrating ServiceNow are obvious, numerous obstacles may occur.Staff may be resistant to accept new technology because they are comfortable with present methods or are concerned about additional workload.

- **Initial Costs:** The financial commitment required for technology installation may dissuade some hoscitals from exploring these options.
- **Training Requirements:** Staff will need training not only on how to utilize ServiceNow, but also on its significance in improving patient care outcomes connected to nutrition.

**Data Security and Compliance** :

Maintaining patient privacy is critical when dealing with sensitive nutritional data. During installation, it is necessary to guarantee compliance with regulations like HIPAA. When implementing digital systems such as ServiceNow, hospitals must implement strong security policies. Regular audits should be performed to

guarantee compliance with privacy rules when using integrated platforms for managing sensitive information. [10][13]

Future Directions in Nutritional Management

Emerging Technologies: Future developments may include artificial intelligence (AI) systems that evaluate patient data for predictive analytics in meal planning based on individual needs.

- AI algorithms could aid in detecting food patterns associated with specific health issues or treatment programs.
- Machine learning models could forecast which patients are most likely to acquire malnutrition based on past data trends.
- Policy recommendations: Policies that promote better nutritional care, such as funding for technological investments or mandated staff training programs, will be critical for long-term success.
- Hospitals should consider forming interdisciplinary nutrition management teams consisting of dietitians, nurses, physicians, IT professionals, and administrative staff.
- Advocating for institutional policies that prioritize funding for nutrition-related technology will aid in the long-term sustainability of these efforts.
- Patient Engagement Strategies: Involving patients in their own nutritional care through instructional programs regarding good eating habits may empower them:
- Hospitals could hold workshops or instructional sessions on nutrition education geared to certain patient demographics (for example, post-operative care).
- Using mobile applications integrated with ServiceNow, patients could access their nutrition plans remotely while offering input straight into the system.

## CONCLUSION:

The opinion emphasizes the importance of addressing malnutrition in hospitals to improve patient outcomes and reduce healthcare costs. The integration of ServiceNow into cafeterias can enhance nutritional management through faster operations, real-time data analytics, and improved communication among healthcare teams. This technology can help identify at-risk patients, execute personalized meal programs, and monitor nutritional intake. Successful case studies show significant reductions in malnutrition rates, higher patient satisfaction, and increased operational efficiency.

Deploying new technologies in healthcare requires addressing staff resistance, data security concerns, and training needs. Hospitals can overcome these challenges by offering comprehensive training programs and fostering a collaborative culture. Addressing malnutrition requires a multidimensional strategy that integrates technology with patient-centered care. Prioritizing nutrition in healthcare can improve patient outcomes and contribute to public health goals. Digital solutions like ServiceNow are crucial in combating malnutrition and improving treatment quality.

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