WHITE PAPER

Integrating Nutritional Care for Cancer Patients into Belgium's Federal Cancer Plan

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List of Abbreviations

ACS	American Cancer Society
BeONCA	Belgian Alliance for Optimal Nutritional Care for All
DRM	Disease-Related Malnutrition
ESMO	European Society for Medical Oncology
ESPEN	European Society for Clinical Nutrition and Metabolism
FTE	Full-Time Equivalent
GLIM	Global Leadership Initiative on Malnutrition
ICD	International Classification of Diseases
KPI	Key Performance Indicator
MNT	Medical Nutrition Therapy
MOC	Multidisciplinary Oncological Consultation
MUST	Malnutrition Universal Screening Tool
NIHDI	National Institute for Health and Disability Insurance
NRS-2002	Nutritional Risk Screening
ONS	Oral Nutritional Supplements
PG-SGA	Patient-Generated Subjective Global Assessment
PROM	Patient Reported Outcome Measure
WHO	World Health Organization

List of Definitions

Cachexia
A multifactorial syndrome characterized by an ongoing loss of skeletal muscle mass (with or without loss of fat mass) that cannot be fully reversed by conventional nutritional support and leads to progressive functional impairment.

Global Leadership Initiative on Malnutrition (GLIM)
An international consensus initiative to standardize the diagnosis of malnutrition.

International Classification of Diseases (ICD)
A globally recognized system for coding diseases, conditions, and health-related issues. It provides a standardized language that healthcare providers use to document diagnoses and procedures. This system is essential for various purposes, including clinical research, health statistics, billing and reimbursement processes.

ICD-10 consists of a hierarchical structure with alphanumeric codes that range from A00.0 to Z99.9. It includes 22 chapters covering a broad range of diseases and conditions.

ICD-11 features a more flexible and user-friendly structure with alphanumeric codes that range from 1A00.00 to ZZ9Z.ZZ. ICD-11 includes 28 chapters, offering a more detailed classification of diseases and conditions. The new structure allows for easier updates and additions, reflecting the latest medical knowledge and practices.

Inpatient
A patient who is admitted to a hospital or healthcare facility and stays overnight or longer for medical care, treatment, or surgery.

Key performance indicator (KPI)
A quantifiable measure used to evaluate the success of an organization, team, or individual in achieving specific objectives. In relationship with National Cancer Plan: Specific, measurable indicators selected through expert consensus (Delphi method) to monitor Belgium's progress towards achieving cancer care and control policy objectives and addressing associated inequalities.

Malnutrition
A state resulting from lack of intake or uptake of nutrition that leads to altered body composition (decreased fat-free mass) and body cell mass, resulting in diminished physical and mental function and impaired clinical outcome.

Nutritional assessment
A comprehensive evaluation of a person's nutritional status, performed after screening indicates risk for malnutrition.

Nutritional screening
The initial step to identify individuals at risk of malnutrition, using validated scoring systems.

Outpatient
A patient who receives medical care or treatment without being admitted to the hospital.

Transmural patient
A patient who receives care that crosses the boundaries between hospital and home/ community settings.

Executive Summary

Disease-related malnutrition (DRM) is one of the most prevalent yet underrecognized challenges in oncology. Affecting between 20% and 80% of cancer patients depending on tumor type and treatment1-4, DRM in oncology leads to poorer clinical outcomes, reduced treatment tolerance, diminished quality of life, increased complication rates, and avoidable healthcare costs.5-15 In Belgium, more than half of patients are at nutritional risk at the start of treatment, yet only a small minority (16%) receive structured nutritional care at that moment.[16-18]

Despite extensive clinical evidence and strong international guidelines from WHO, ESPEN and ESMO, nutritional care in Belgium is still not structurally embedded within transmural oncology pathways. Screening is inconsistent, particularly in ambulatory settings; nutritional assessments are not systematically performed; follow-up is fragmented; and staffing shortages, insufficient reimbursement, and limited training further weaken implementation. A lack of integrated national data and the limitations of current ICD-10 coding contribute to an incomplete understanding of the true magnitude of DRM.

This white paper consolidates scientific literature, international best practices, Belgian data, and the insights of a multidisciplinary stakeholder roundtable including clinicians, dietitians, researchers, nurses, and patient advocates. It identifies key barriers and provides actionable recommendations for integrating nutritional care into the renewed National Cancer Plan.

Key recommendations include

- **Mandating systematic nutritional screening** using validated tools for all cancer patients in both inpatient and outpatient settings.
- **Embedding nutritional assessment** based on GLIM criteria at critical time points throughout treatment.
- **Establishing structured nutritional care pathways, preferentially transmural**, with clear responsibilities and timelines.
- **Recognizing medical nutrition as a national accredited specialization** and strengthening training for healthcare professionals.
- **Ensuring adequate reimbursement and financing** for nutritional screening, assessment, intervention, and follow-up across the cancer care continuum.
- **Empowering patients** through education and practical tools, such as checklists or digital applications.
- **Ensuring that all cancer patients** receive validated information on nutrition before their nutritional status becomes problematic.
- **Improving data infrastructure** by using ICD-11 coding and integrating screening and assessment data across care levels.
- **Defining a focused set of KPIs** to ensure transparency, measure progress, and guide continuous improvement on nutritional status.

The renewal of Belgium's Federal Cancer Plan presents a unique window of opportunity. By prioritizing nutritional care, Belgium can significantly improve patient outcomes, enhance the efficiency of its healthcare system, and align with international standards of best practice.

Nutritional care must become a foundational element of cancer care, not an optional add-on, but a measurable, funded, and systematically implemented component of the national oncology strategy. Responsibility should not rest with patients but be embedded in the health care system.

Methodology

This white paper reflects the outcome of a structured roundtable process involving a broad group of stakeholders, including clinicians, dietitians, researchers, nurses, and patient advocates. The roundtable was established to foster constructive dialogue and to build a shared understanding of the current challenges and opportunities in nutritional care within oncology.

As an initial step, all participants received a questionnaire on nutritional screening and assessment. The results served as the foundation for a subsequent in-person stakeholder meeting, where best practices, barriers, and opportunities related to early nutritional screening and assessment in oncology were discussed. During this meeting, each stakeholder was given the opportunity to present their perspectives and recommendations, ensuring that all voices were heard and were considered in shaping the proposed updates for the renewed Cancer Plan.

The session was facilitated by Danone Nutricia and moderated by a representative of the Belgian federation of Medical Technologies (beMedTech), with academic support from Prof. Dr. Elisabeth De Waele (UZ Brussel/Vrije Universiteit Brussel) and Prof. Dr. André Van Gossum (HUB-Brussels).

This white paper represents the consolidated output of that process. Subsequent revisions were incorporated based on the collective input (of all contributors, ensuring that the final document accurately reflects the expertise and viewpoints of the participating stakeholders).

Introduction

The Belgian federal government has announced the development of a renewed Federal Cancer Plan, with a strong emphasis on prevention, early detection, high-quality treatment, and comprehensive patient follow-up. As this plan is being shaped, it presents a pivotal opportunity to address one of the most widespread yet insufficiently acknowledged challenges in oncology: disease-related malnutrition (DRM).

Although robust evidence demonstrates that malnutrition adversely affects clinical outcomes, increases healthcare expenditure, and compromises patients' quality of life, nutritional care remains insufficiently embedded within current cancer care pathways.

This white paper consolidates scientific evidence, international best-practice guidelines, Belgian data, and the insights of multidisciplinary experts to advocate for the systematic integration of nutritional screening, assessment, and intervention in the forthcoming national Cancer Plan.

Lastly, it is important to mention the ongoing discussion between the terms "malnutrition" and "undernutrition". Indeed, whereas "malnutrition" is a long and widely accepted terminology (e.g. Malnutrition Awareness Week and the use of malnutrition in international scientific guidelines such as ESPEN), the term "undernutrition" might be more appropriate in the future. In this paper, it has been decided to use the term "malnutrition" instead of "undernutrition", unless specified otherwise.

The Burden of Malnutrition in Cancer Care

Malnutrition can be defined as a state resulting from inadequate intake or absorption of nutrients, leading to altered body composition, reduced physical and mental function, and impaired clinical outcomes. It can result from starvation, disease or advanced ageing, alone or in combination.[19] DRM is a common and serious issue among cancer patients. In oncology, malnutrition may arise from the biological effects of the tumor itself, from metabolic changes due to inflammation, or from treatment-related side effects such as anorexia, nausea, mucositis, or gastrointestinal discomfort.[8, 20, 21]

The prevalence of DRM in cancer patients varies widely between 20% and over 80%, depending on cancer type, cancer stage, and type of treatment.[1, 2, 22, 23] The highest prevalence of DRM has been observed in patients with digestive cancers (e.g. pancreas, gastro-esophageal, and colorectal cancer), head & neck cancer, ovarian & uterine cancer and lung cancer.[24] In Belgium, recent studies reveal that more than half of patients are at nutritional risk at the time of treatment initiation[16,17], whereas only a small minority (around one in ten) actually receive a nutritional care plan at that moment.[18]

The clinical consequences of DRM are extensive: it leads to a reduced quality of life,[6,7] reduces the body's immune function with increased susceptibility to infections,[5,25] diminishes tolerance to chemotherapy and radiotherapy, and frequently leads to dose reductions or treatment interruptions.[26] It is widely recognized that 10% to 20% of cancer patients do not succumb to their tumor, but rather to the complications of severe malnutrition.[8, 27, 28]

Not only does DRM impact the life of patients, the economic implications are equally profound. Malnutrition increases the length of hospital stays, drives up readmission rates, and raises complication rates significantly.[10-14] European estimates show that malnutrition contributes to €170 billion in avoidable costs each year.[15] In the Netherlands, malnutrition produces a cost burden of €3 billion per year in direct healthcare costs alone and €5.4 billion of direct and indirect costs.[9] Furthermore, every euro invested in early nutritional intervention offers a return of over €14 over a 5-year period,[9] clearly demonstrating that nutritional care, including early nutritional screening, nutritional therapy and monitoring, is cost-effective, with clinical and financial benefits, as also established by the WHO.[29] Additionally, a Dutch study demonstrates that the social return of the investment of dietitian involvement ranges between €4 to €23 for each euro invested.[30]

It has recently been underlined by the European Society for Clinical Nutrition and Metabolism (ESPEN) that early and intensive medical nutritional treatment in patients suffering from DRM reduces not only mortality and complications, but also healthcare costs, resulting in a net monetary benefit of 5110 USD per patient due to reduced readmissions and improved health-related quality of life.[31, 32]

Evidence-Based Approaches to Nutritional Management in Cancer Care

International scientific guidelines (e.g. ESPEN, American Cancer Society, WHO) offer a clear framework for structuring nutritional care in oncology. Screening and assessment should begin at the moment of cancer diagnosis and be repeated at regular intervals throughout the entire treatment trajectory. According to ESPEN expert recommendations, standardized nutritional management comprises three sequential steps: malnutrition risk screening, nutritional assessment, and individualized nutrition counseling.[19]

The first step, malnutrition risk screening, is designed as a rapid and pragmatic method to identify patients who are malnourished or at risk of becoming so. This process must rely on validated tools such as the Nutritional Risk Screening (NRS-2002), the Malnutrition Universal Screening Tool (MUST), or the Patient-Generated Subjective Global Assessment (PG-SGA).[33-35] The PG-SGA, widely used in oncology, is a sensitive and validated instrument that captures both clinical and patient-reported information.[35] Its condensed version, the PG-SGA Short Form, can be completed independently by patients before consultation, saving valuable time in clinical practice while actively involving patients in their own care.[36] Screening should occur at predetermined and recurring time points, such as at every hospital admission or during scheduled medical consultations, to ensure early detection of deterioration.[37, 38]

When screening results indicate elevated risk, the second step, comprehensive nutritional assessment, is initiated. This includes evaluation of nutrition impact symptoms, detailed medical and dietary history, laboratory parameters, and medication review. Based on this assessment, the third step involves personalized nutrition counseling delivered by qualified healthcare professionals, for example by dietitians specialized in clinical and oncological nutrition. The primary aim of counseling is to optimize oral intake, address symptoms affecting nutritional status, and over time improve the overall nutritional condition of the patient.8,21 Evidence shows that individualized nutritional counseling is associated with significant benefits, including reduced mortality, improved functional outcomes, better quality of life, and enhanced treatment tolerance.[37, 39]

Although current oncology guidelines (ACS, ESPEN, ESMO) consistently endorse standardized nutritional management for all cancer patients,[19,40] its translation into routine clinical practice remains insufficient. Despite the high prevalence of malnutrition and the strong evidence supporting structured nutritional interventions, implementation across many clinical settings continues to lag behind recommended standards.[37]

International Insights: How European Countries Integrate Nutritional Care into Cancer Care

Unfortunately, across Europe, no single country can be identified as a definitive benchmark for best practices in nutritional oncology. However, several countries including France, Germany, and the Netherlands demonstrate strong and comprehensive approaches, particularly through their coverage of nutritional care across inpatient, outpatient, and community settings. These integrated systems support continuity of care and ensure that patients receive nutritional support throughout their treatment pathway.

Emerging best practices across Europe consistently highlight the importance of early assessment, structured clinical pathways, and embedding nutrition into routine oncological care:

France, Germany, and the Netherlands ensure **broad nutritional care coverage across all care levels,** contributing to more consistent patient outcomes.[22-23]

Germany employs a structured coding system, the German Diagnosis Related Groups (G-DRG) system. This is a **mandatory, nation-wide, case-based reimbursement system** introduced in 2003/2004 to enhance hospital efficiency, transparency, and cost control. This allows to identify malnutrition and cachexia, monitor the use of home parenteral nutrition, and assess the proportion of patients affected by cachexia.

Italy has **advanced awareness and institutional engagement** by establishing working groups such as the Italian Intersociety Working Group for Nutritional Support in Cancer Patients to update practical recommendations and strengthen national strategies, though further standardization is needed.[41]

The Netherlands has launched an **independent and interdisciplinary platform of expertise in the areas of awareness, prevention, detection, and treatment of malnutrition,** the Malnutrition Knowledge Center (KCO). This knowledge center has developed practical toolkits and implemented projects for "Early Detection and Treatment of Malnutrition" in hospitals, institutions, and home care. Since 2006, the results have been monitored and supervised using various performance indicators from the Public Health Inspectorate.

Collectively, these examples illustrate that best practices are emerging across multiple countries, driven by early detection, integrated care models, and formal inclusion of nutritional care within cancer care pathways.

Why Nutritional Care Must Be Fully Integrated into the Belgian Federal Cancer Plan

International guidelines make it clear that early, systematic nutritional screening is essential. Screening is the gateway to a correct nutritional assessment and treatment plan. The Global Leadership Initiative on Malnutrition (GLIM) and ESPEN both advocate screening at the moment of diagnosis, accompanied by assessment of food intake, weight loss, BMI, muscle mass, physical function, and inflammation.[19,42] The GLIM framework is supported by more than 400 scientific studies and demonstrates strong predictive validity for mortality, complications, and treatment tolerance.

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Early detection is consistently shown to improve patient outcomes.[43-45] It enables interventions such as dietary counseling, oral nutritional supplements, and specialized nutritional support before malnutrition becomes severe. Screening of malnutrition at cancer diagnosis is far more effective than waiting until a patient is visibly unwell or has lost significant weight. Those patients who did not show any signs of DRM at diagnosis should be further monitored for malnutrition during the treatment trajectory.[31]

In addition to the clinical rationale, there is strong economic justification for integrating nutritional care into the Cancer Plan.[9, 15] Early nutritional intervention reduces hospital stays, minimizes complications, and avoids treatment delays.[10-14] Studies show that nutritional interventions can produce a positive financial return within the same year they are implemented.[9]

In 2023, WHO Europe published policy recommendations to address DRM29, the main elements being (a) to recognize DRM as a critical issue to be addressed by policymakers and healthcare professionals; (b) to integrate nutritional care in primary care and all inpatient and outpatient settings; and (c) to strengthen nutritional education of healthcare professionals.

Other European countries, including the Netherlands, Germany, and France, have already adopted national policies mandating systematic malnutrition screening. Without decisive action, Belgium risks falling behind in the quality and efficiency of oncological care.

Early nutritional screening is still not performed consistently across Belgian hospitals. Validated tools such as the NRS-2002, MUST or PG-SGA are used sporadically and typically only in inpatient settings.[33, 35] Ambulatory cancer patients, who may be at equal or higher risk, are frequently overlooked. Even within hospitals, screening is not always linked to a structured process for dietitian referral, assessment, and follow-up.[16, 18, 47]

Some Belgian hospitals lack standardized nutritional care pathways that would ensure consistency across disciplines and departments. As a result, patients with similar needs may receive entirely different levels of care depending on where they are treated. After discharge, nutritional deterioration often continues without systematic follow-up, and the reimbursement structure does not adequately support outpatient nutritional counseling.

Belgium lacks national epidemiological data on DRM. While hospitals collect screening information on malnutrition, these data are not systematically integrated or reported at a national level. This absence of consolidated data hampers evidence-based policymaking and limits the ability to design targeted interventions and allocate resources effectively.

Finally, patient awareness of malnutrition risks and consequences remains low. Patients are rarely informed about the importance of a good nutritional status and nutritional monitoring starting from the moment of cancer diagnosis.[48] There is a pressing need for earlier and clear communication, validated educational tools, and support systems to help patients take an active role in preventing or treating malnutrition.

BELGIAN CONTEXT

Remaining Gaps, Barriers and Emerging Opportunities

1. Screening for and (Under)diagnosis of Malnutrition
2. Lack of Structured Nutritional Protocols
3. Transmural Handover to Primary Care
4. Nutritional Assessment and Intervention
5. Building Expertise, Capacity, and Access in Medical Nutrition
6. The Role of Patients in Nutritional Awareness
7. Challenges with Data and Implementation
8. From Data to Impact: Establishing KPIs for Transparency, Monitoring, and Policy Improvement
9. Strategic Priorities for Implementation of Nutritional Care in the Cancer Plan

The first version of the Federal Cancer Plan, which was launched in 2008 by Minister Onkelinx,[49] consisted of 30 concrete actions. However, none of which involved actions concerning mal/undernutrition in cancer patients. Since then, Belgium has made important progress to address DRM. The extension of the Federal Cancer Plan (in 2011) allowed hospitals with a recognized oncologic care program to be eligible for funding to recruit up to a maximum of 4 full-time equivalent (FTE) dietitians, depending on the number of Multidisciplinary Oncology Consultations (MOCs), with a total budget for 163 FTE's. However, this funding has never been indexed. Additionally, since 2008 there has been an increase in the number of oncology patients (increase in the number of MOCs) and the current dietetic care is no longer sufficient to provide adequate care.

Another new element of this extended plan was to provide in psychological and nutritional support consisting of prevention, detection and management of oncological patient at risk or suffering from cachexia. However, only 11 single projects were funded during the course of 2 years without reporting and without a clear overview of the results.

Furthermore, the Belgian Alliance for Optimal Nutrition Care for All (BeONCA), a national platform to improve both the quality of food supply and nutritional care, was established in 2015.[50] One of the missions of BeONCA is to raise malnutrition awareness via different activities.

Another good practice in Belgium is the Nutritional Support Teams, composed of dietitians, doctors, pharmacists and nurses, including nutrition nurse specialists. These teams are established in hospitals to manage specialized enteral and parenteral nutrition and focus on evidence-based care, particularly for home parenteral nutrition, with funding from the National Institute for Health and Disability Insurance (NIHDI) and oversight from organizations like the Belgian societies for clinical nutrition.

However, despite these developments, substantial gaps continue to persist.

1 Screening for and (Under) diagnosis of Mal-nutrition

Nutritional impairment is already present in a substantial proportion of patients at the time of cancer diagnosis, ranging from early weight loss and reduced intake to overt disease-related malnutrition (DRM). This burden increases further during treatment, as therapy-related toxicities and metabolic alterations exacerbate nutritional decline. The risk is particularly high among patients with gastrointestinal, ovarian, and head-and-neck malignancies, where tumor location and treatment effects significantly increase the likelihood of malnutrition and cancer cachexia. Recent Belgian data indicate that up to 50% of patients with cancer are at risk of malnutrition, and approximately 25% are already malnourished at diagnosis.[16-18]

Despite the availability of several validated screening tools (MUST, NRS-2002, PG-SGA), substantial barriers continue to hinder effective nutritional screening and timely diagnosis, especially in outpatient and ambulatory care settings, where nutritional risk is often underestimated. As a result, malnutrition remains frequently underdiagnosed, preventing patients from receiving early nutritional interventions that could help to improve treatment tolerance and outcomes. Studies highlight the importance of early identification of patients at risk in order to improve the efficacy of nutritional interventions, regardless of the stage of the disease.[43-45]

RECOMMENDATION

Enforce mandatory early nutritional screening using a validated screening tool into the Federal Cancer Plan for all cancer patients (including outpatients) at cancer diagnosis in hospitals. Particular attention should be given to high-risk groups, such as patients with digestive, ovarian or head and neck cancers. Screening can be performed by trained professionals (e.g. nurses, dietitians, physicians/specialists). Foresee uniform registration and regular monitoring of cancer patients suffering from DRM or at risk of DRM. Ensuring universal, structured screening will support early detection and intervention, ultimately improving cancer patient outcomes. Additionally, strengthening reimbursement structures and improving access to outpatient dietetic consultations delivered by trained dietitians would help reduce inequalities in access to nutritional care.

2 Lack of Structured Nutritional Protocols

The malnutrition risk screening should be performed at regular intervals throughout the entire oncological disease process, e.g. at cancer diagnosis, at the start of anticancer treatment, at each hospital admission or at appointments with physicians.[37, 38]

In some hospitals, the absence of standardized nutritional protocols and/or the absence of implementation of nutritional care into the cancer care pathways limits the systematic screening, assessment, follow-up, and intervention needed to address malnutrition effectively. Without clearly defined responsibilities and timing, nutritional care often becomes fragmented and inconsistent.

RECOMMENDATION

Require every hospital to implement a standardized protocol for consistent nutritional risk screening of cancer patients suffering from DRM or at risk. This protocol should not explicitly define responsibilities (e.g., medical doctor, nurse, dietitian) but should rather focus on the timing of screening (e.g., within 1 week of cancer diagnosis), and integrate screening/ evaluation of the nutritional status into existing cancer care milestones, such as during the first MOC. This process should not be overregulated but must ensure accountability and traceability. Establishing structured and integrated pathways will enhance continuity of care and ensure timely personalized nutritional support for all patients. Ideally, the exchange of nutritional protocols between different healthcare providers and hospitals should be facilitated.

3 Transmural Handover to Primary Care

Post-hospital discharge, nutritional deterioration frequently persists undetected due to inadequate structured handover, despite evidence indicating that malnutrition risk exceeds 50% in Belgian cancer patients shortly after baseline assessment.[18] To ensure continuity, as recommended in ESPEN practical guidelines for cancer, a standardized transmural care pathway must be implemented for "transmural patients", defined as those receiving care spanning hospital and home/community settings.[8] This pathway comprises four sequential steps with defined responsibilities and timelines:

STEP	ACTION	RESPONSIBLE PARTY	TIMELINE
Discharge preparation	Summarize nutritional plan[i] (NRS-2002/ MUST results, GLIM status, ONS/diet advice) in a standardized document shared via EPD or e-health platform.	Hospital dietitian/ oncology team	48 hours pre-discharge
Handover to primary care	Transmit summary including risk status, follow-up schedule (rescreening every 4 weeks), and referral to primary care dietitian if >5% weight loss; coordinate with general practitioner.	Hospital via EPD/email	At discharge
Home monitoring	Patient teleconsult/app[i] (PG-SGA Short Form self-reporting); escalate deterioration to hospital.	General practitioner and patient, cc hospital	Weekly in first month
Evaluation	KPI tracking: % transmural patients with follow-up; integrate adjustments into MOC or primary care consult.	Multidisciplinary (hospital + primary care)	

[i]Continuity in the use of the screening tool is recommended to reliably track changes in nutritional status over time

This approach aligns with Europe's Beating Cancer Plan recommendations[51], mandating nutritional care across all levels including primary care, and mitigates underdiagnosis in ambulatory settings. Supplementary funding for primary care reimbursements (e.g., via NIHDI initiatives) and training for general practitioners and dietitians are essential, drawing from Dutch and French transmural network models.

RECOMMENDATION

Mandate this pathway in hospital protocols, with clear Key Performance Indicators (KPIs) for handover success (e.g., target: > 90% within 48 hours). This strengthens the Cancer Plan's continuum-of-care focus and incorporates recent 2024 data.[18]

4 Nutritional Assessment and Intervention

Malnutrition risk screening is only the first step in a comprehensive approach to managing DRM.[43] Once a patient is identified as being at nutritional risk, a full nutritional assessment is essential to determine the severity and underlying causes of malnutrition. Tools such as the GLIM criteria (incorporating weight loss, BMI, muscle mass, and inflammatory markers) provide a standardized framework to assess nutritional status throughout the cancer treatment trajectory.[42]

Cancer care requires a holistic approach. A robust treatment plan should incorporate both clinical and supportive elements, particularly in outpatient settings where continuity of care can be more challenging. A structured nutritional plan with clearly defined timelines for screening, assessment, intervention, and monitoring should be an integral part of this approach. Since screening alone does not improve prognostic outcomes unless followed by appropriate nutritional assessment and intervention, systematic nutritional follow-up is essential.

RECOMMENDATION

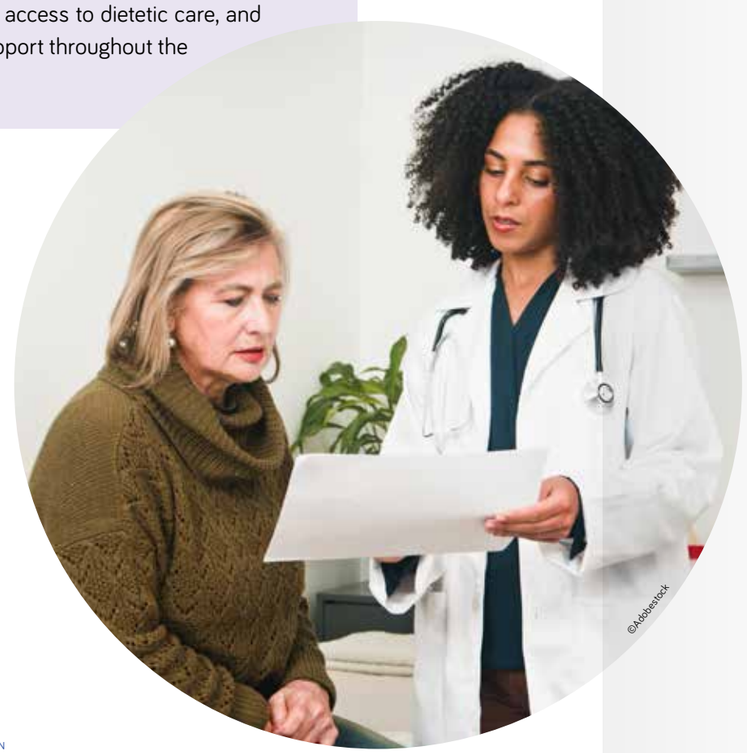
Ensure that nutritional assessments and interventions are conducted in a timely and structured manner at all key moments during the cancer care pathway (e.g., prior to treatment initiation, during therapy, and after major treatment changes such as surgery, chemotherapy adjustments, or the start of radiotherapy). These milestones should be embedded within a comprehensive personalized nutritional care plan that outlines clear timelines for nutritional screening, (re-)evaluation, implementation, and monitoring and should be integrated in the global oncologic care pathway and oncological treatment plan.

5 Building Expertise, Capacity, and Access in Medical Nutrition

Inadequate training among healthcare professionals remains a significant barrier to effective recognition and management of malnutrition. Many clinicians and nurses have limited preparation in identifying early signs of nutritional decline or understanding its clinical impact.[46] Compounding this challenge, Belgium, unlike countries such as France, the Netherlands, and the UK, does not fully recognize clinical nutrition as a (para)medical nationally accredited specialty. Furthermore, clinical nutrition furthermore falls within the core expertise of the dietitian; however, dietitians are currently underutilized in this domain. It is therefore essential that dietitians are engaged early in the care pathway. Dietitians possess the requisite skills to detect malnutrition early, accurately register it, and proactively anticipate appropriate interventions. Timely nutritional optimization by a dietitian moreover ensures better treatment response and faster recovery.

RECOMMENDATION

Provide adequate financing and reimbursement for all components of nutritional care (screening, assessment, intervention, monitoring, and medical nutrition therapy) in both inpatient and outpatient settings. Revise the resources for oncology dietitians, and reimbursement for primary care dietitians post-discharge. Ensuring appropriate financing will support sufficient staffing levels, improve access to dietetic care, and strengthen the continuity of nutritional support throughout the entire cancer care pathway.



Currently, the funding of oncology dietitians is based on the number of MOCs in 2008, while both oncological care and the patient group have evolved significantly in the past two decades. Data from the Belgian Cancer Registry (belgian-cancer-registry.shinyapps.io/data_app/) show a 27% increase of new cancer diagnoses between 2008 and 2023, going from 60,599 up to 77,344 new cancer diagnoses. Therefore, the foreseen number of oncology dietitians (max 4 FTE's and a total budget for 163 FTE's) is insufficient to the current needs of nutritional care for all cancer patients. Furthermore, a clear delineation of the responsibilities of the different stakeholders is often lacking (e.g., who does what at diagnosis, screening and therapy; who is communicating when, to whom and about what topic exactly). Moreover, dietitians and other caregivers are still insufficiently part of the nutrition support teams. Additionally, the link between the first, second and third line nutritional care in case of DRM is not clear and the appropriate IT-tools are missing.

Therefore, healthcare professionals often lack sufficient time and resources to screen and assess every patient adequately, particularly in busy hospital environments. Many institutions also face shortages of dietitians and qualified personnel, limiting the ability to provide timely nutritional assessments. In ambulatory settings, dietitians and nutrition support teams, including nutrition nurse specialists, encounter additional challenges due to limited reimbursement for consultations, particularly for transmural and outpatient care, reducing access to specialized nutritional support. Additionally, reimbursement of medical nutrition therapy (oral nutritional supplements) is missing, both in the inpatient as well as in the outpatient setting. Funding should ideally take reference centers into account, as MOC does not always take place in centers where specific treatments are carried out (e.g., hematology, radiotherapy, specific surgery, etc.).

RECOMMENDATION

Provide adequate financing and reimbursement for all components of nutritional care (screening, assessment, intervention, monitoring, and medical nutrition therapy) in both inpatient and outpatient settings. Revise the resources for oncology dietitians, and reimbursement for primary care dietitians post-discharge. Ensuring appropriate financing will support sufficient staffing levels, improve access to dietetic care, and strengthen the continuity of nutritional support throughout the entire cancer care pathway.

6 The Role of Patients in Nutritional Awareness

A cancer diagnosis often leaves patients feeling anxious, confused, overwhelmed, and emotionally distressed.[52] At the outset of what may be a lengthy and complex treatment journey, patients are presented with large volumes of clinical and logistical information. This information overload limits their ability to fully absorb and act upon critical guidance, including advice on nutritional status and care.

Yet, patient awareness is essential. Early understanding of malnutrition risks and its potential impact on treatment tolerance, outcomes, and quality of life empowers patients to engage proactively in their own care. Although many hospitals already have brochures in place, ensuring that patients receive clear, accessible, and actionable nutritional information from the moment of cancer diagnosis (or after a first follow-up consultation) remains a critical component of high-quality oncology care. The role of disease specific patient organizations is underexplored, for example by informing newly diagnosed patients on the importance of adequate nutrition and nutritional status, by using materials co-designed and validated by specialists.

RECOMMENDATION

Promote patient empowerment after hospitalization by providing recognized patient-centered tools, such as a structured checklist or a digital application, to guide patients through key nutritional care-related topics. These tools should be scientifically substantiated and kept up to date, ideally in collaboration with specialized dietitians. Additionally, these tools should offer practical advice on managing nutritional status (incl. weight loss), adapting dietary intake before and after treatments, coping with taste alterations during or after chemotherapy, and recognizing early signs of nutritional decline. Collaboration with patient organizations and peer support networks to share and spread the information should be encouraged to strengthen patient engagement and support self-management throughout the cancer treatment pathway. Additionally, empower patients with their own data on malnutrition (in combination with other parameters, such as exercise) in order to incorporate Patient Reported Outcome Measures (PROMs).

7 Challenges with Data and Implementation

Accurate data collection and coding are essential for measuring the prevalence of malnutrition and guiding appropriate interventions. Under the current ICD-10 system, undernutrition is difficult to register accurately, and coding must be performed or validated by medical doctors. This results in significant underreporting.

The ongoing transition to ICD-11 provides a critical opportunity for improvement. An amendment to ICD-11, including specific codes for undernutrition in adults that are directly aligned with GLIM criteria, has recently been approved by WHO. This will enable more accurate and standardized documentation.[53]

In addition, while screening data are collected in many hospitals, there is no centralized system to integrate, track, and systematically use these data across care settings. Some institutions do not consistently act on screening results, leading to missed opportunities for timely intervention. Effective data integration within hospital information systems and across the continuum of care (hospital, ambulatory, and home care) is essential to ensure continuity and optimize patient outcomes.

RECOMMENDATION

Leverage the transition to ICD-11 to strengthen the accuracy of undernutrition registration and formally incorporate GLIM criteria into nutritional assessment protocols. Provide hospitals and care networks with clear tools, standards, and guidelines for data integration, ensuring that screening results systematically trigger follow-up actions. Promote intra- and extra-hospital data exchange to support collaborative care networks and enable consistent, evidence-driven nutritional management across all care settings.

8 From Data to Impact: Establishing KPIs for Transparency, Monitoring, and Policy Improvement

Belgium lacks national epidemiological data on DRM. Although hospitals collect data on malnutrition screening, these are not integrated across institutions and are not consolidated into national reporting. This prevents policymakers from fully understanding the scale of the problem and benchmarking with other European countries that have already adopted national policies mandating systematic malnutrition screening.

Effective policy implementation depends on the ability to measure progress against defined objectives. KPIs translate strategic priorities into measurable outcomes, enabling consistent monitoring and evidence-based decision-making. Within a national health strategy or Cancer Plan, KPIs provide the backbone for performance management—supporting accountability, highlighting gaps, and informing resource prioritization across stakeholders. KPI frameworks must, however, remain feasible in practice: they should minimize additional workload for healthcare professionals and leverage existing data infrastructures wherever possible.

Examples of such KPIs could be: the percentage of patients screened, the percentage with nutritional care plans in case of positive screening and/or risk of malnutrition, percentage of patients with primary care follow-up within 2 weeks after completion of intensive therapy (chemotherapy/radiotherapy), or upon discharge if no adjuvant phase, and outcome measures to track progress and incorporation of PROMs.

RECOMMENDATION

Establish a nationally coordinated KPI framework for nutritional care within the renewed Cancer Plan, supported by a centralized data platform that integrates in- and outpatient information from all oncology care settings. Select a focused set of no more than three core KPIs to ensure feasibility, comparability, and meaningful monitoring. These KPIs should be uniformly defined, systematically collected, and reported annually (preferentially via the cancer registry) to enable benchmarking across institutions and alignment with international standards, without much additional workload for healthcare practitioners. This framework will provide policymakers with reliable, population-level insights, support evidence-based decision-making, and drive continuous improvements in the quality of nutritional care for cancer patients.

9 Strategic Priorities for Implementation of Nutritional Care in the Cancer Plan

While all recommendations outlined in this white paper are essential for integrating and strengthening nutritional care in oncology, it is unlikely that they can be implemented simultaneously. A phased and strategic approach is therefore required. In the interest of maximizing patient benefit, the highest priority should be the systematic and early nutritional screening of all cancer patients (in- or outpatient), accompanied by the integration of a personalized nutritional care plan including monitoring and follow-up into every patient's oncologic treatment pathway.

Alongside this primary objective, several enabling conditions must also be addressed to ensure successful implementation. These include adequate access to dietitians, appropriate funding and reimbursement structures, and strengthened education and awareness among both healthcare practitioners and patients. Together, these pillars form the foundation for a sustainable, patient-centered nutritional care model within Belgium's renewed Federal Cancer Plan.

Conclusion

Belgium stands at a pivotal moment in the redevelopment of its Federal Cancer Plan. The evidence presented in this white paper clearly demonstrates that DRM is not a marginal concern but a decisive factor influencing clinical outcomes, treatment tolerance, quality of life, and healthcare costs. Despite existing initiatives and growing awareness, nutritional care remains inconsistently implemented, insufficiently resourced, and structurally underrecognized across the oncology pathway.

Fully integrating systematic nutritional screening, timely assessment, personalized intervention, and structured follow-up into cancer care is both an ethical obligation and a strategic opportunity. The scientific evidence is unequivocal: early nutritional intervention improves cancer patient outcomes and reduces avoidable healthcare expenditure. The international policy landscape is evolving, and Belgium must not fall behind.

Now is the time for decisive action.

Policymakers, clinicians, dietitians, patient organizations, and healthcare institutions must work together to fully integrate nutritional care as an established pilar of cancer care. The renewed Federal Cancer Plan should:

- Mandate and finance early and continuous nutritional screening and assessment, and nutritional intervention;
- Integrate standardized nutritional protocols in the full cancer care pathways;
- Strengthen training and recognize clinical nutrition as a medical specialty;
- Support patients with validated accessible tools and education;
- Improve uniform data collection, integration, analysis and national reporting;
- Establish KPIs that measure progress and accountability of nutritional care in oncology.

To implement these recommendations, dietitians specialized in clinical and oncological nutrition play a unique longitudinal role in cancer care by supporting patients from cancer diagnosis through treatment and survivorship, ensuring continuity of nutritional care across care settings. By implementing these changes, Belgium can ensure that every patient regardless of cancer type, hospital, or care setting receives high-quality, evidence-based nutritional care. The opportunity is clear, the tools are available, and the benefits are compelling.

The call to action is simple

Make nutritional care an essential, measurable, and fully funded pillar of Belgium's renewed Federal Cancer Plan.

Patients deserve nothing less.

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Contact

Be ONCA	belgianalliance.onca@gmail.com
Belsio	Info@belsio.be
BSMO	administration@bsmo.be
Danone	pers@danone.com
UPDLF	info@lesdieteticiens.be
PEC	info@patientexpertcenter.be
SBNC	info@sbnc.site
SBMN	sbmn.medecin@gmail.com
SIO	contact@sioncologie.be
UZA	nutritieteam@uza.be
UZ Brussel	secretariaat.klinischenutritie@uzbrussel.be
VBVD	info@vbvd.be
VVGE	secr@vvge.be
VVKVM	info@vvkvm.be
VVRO	info@vvro.be
VWHHT	info@vwhht.be

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