

2024

# FoodHeals™ Report

Exploring Nutritional Aspects  
of Childhood Cancer in India



# Foreword

It is with deep respect and admiration that I introduce the FoodHeals™ Report 2024, that highlights the critical role of nutrition and nutritionists in the treatment and recovery of children with cancer. Nutrition has often been overlooked in paediatric oncology, overshadowed by the more visible aspects of medical care. Yet, a well-nourished child is far better equipped to endure treatment and achieve positive outcomes.

This report sheds light on the current state of nutritional care and intervention for paediatric cancer patients. It also underscores the importance of personalised nutrition plans, which have proven essential in improving treatment tolerability and overall health outcomes for these young patients.

The statistics presented here reveal the challenges in addressing malnutrition among children with cancer. They serve as a reminder that while progress has been made, much work remains to be done. As we reflect on these findings, it is clear that addressing the nutritional needs of children with cancer must remain a top priority. It is our collective responsibility to ensure that nutritional support is integrated into every aspect of paediatric oncology care. By doing so, we can significantly improve the quality of life and survival rates for these brave young warriors.

With continued focus and commitment, together, we can advocate and ensure that every child receives the comprehensive care they deserve, empowering them in their fight against cancer.



## **DR. MANAS KALRA**

Senior Consultant, Paediatric Haematology,  
Oncology and Bone Marrow Transplant  
Sir Ganga Ram Hospital, New Delhi  
Honorary Secretary,  
Paediatric Haematology Oncology Chapter,  
Indian Academy of Paediatrics.

# Executive Summary

In India, it is estimated that childhood cancer affects over 76,000 children annually. The FoodHeals™ Report 2024, highlights a critical gap in nutritional care for these patients. The percentage of patients undernourished at diagnosis has remained relatively consistent over the past three years ranging from 57-61% and underscores the critical nutritional challenges faced by patients at diagnosis. This is emphasised by the statistic that approximately 65% of new patients consume less than half their daily calorie and protein needs.

Inadequate nutrition negatively impacts treatment outcomes, leading to reduced tolerance to therapy, increased infections, and compromised growth. The report highlights the urgent need for specialised nutritionists and a structured Nutrition Care Process in paediatric oncology. Currently, the low nutritionist to patient ratio is a significant barrier to providing optimal care. Although many studies advocate for a higher ratio or the placement of a specialised nutritionist within the paediatric oncology unit, hospitals continue to have few nutritionists due to the lack of clear guidance on the ideal nutritionist to patient ratio.

Recognising the need for nutrition support in children with cancer, multiple stakeholders including the government, medical bodies and NGOs have been working towards addressing this issue.

In conclusion, investing in nutrition services, enhanced training, and implementing a personalised nutrition care approach is crucial for improving survival rates and quality of life for paediatric cancer patients in India.

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# Section A: Childhood Cancer Scenario in India

~76,000

Children (0-19 years) may develop cancer every year in India.<sup>1</sup>

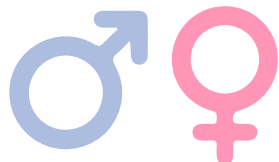


It is estimated that the childhood cancer burden accounts for 3% of boys and 1.8% of girls in the age group of 0-14 yrs.<sup>2</sup>

## ► Gender and Age Distribution\*

66%

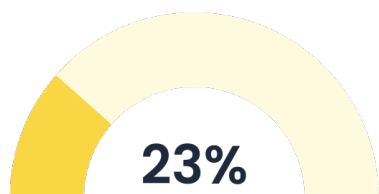
Male



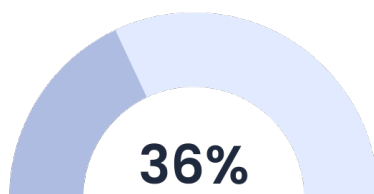
34%

Female

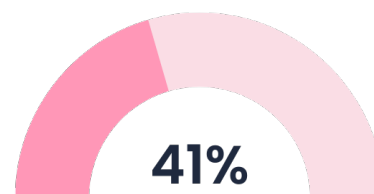
The gender distribution has remained unchanged for the past 4 years, aligning with the ratio of cancer diagnosis among boys and girls in India, which stands at 1.58.<sup>3</sup>



Less than 5 years



5- 10 years



Greater than 10 years

\*The data analysis is based on 11,800+ children with cancer supported by Cuddles Foundation during the financial year 2023-2024, distributed across 42 government and charitable hospitals in India.

# ▶ Childhood Cancer types across India\*

The majority of cases were haematological cancers.

60%

Haematological Cancers

40%

Solid Cancers

## Most Prevalent Haematological Cancers

B-cell Acute Lymphoblastic Leukaemia (B-ALL)	39%
Acute Lymphoblastic Leukaemia (ALL)	21%
Precursor B-Lymphoblastic Leukaemia (Pre BALL)	12%
Acute Myelogenous Leukaemia (AML)	11%
T-cell Acute Lymphoblastic Leukaemia (T-ALL)	11%
Chronic Myelogenous Leukaemia (CML)	3%

## Most Prevalent Solid Cancers

Hodgkin's Disease	17%
The Ewing's Sarcoma Family of Tumours	12%
Retinoblastoma	10%
Neuroblastoma	10%
Osteosarcoma	10%
Wilms' Tumour	8%
Rhabdomyosarcoma	7%

\*The data analysis is based on 11,800+ children with cancer supported by Cuddles Foundation during the financial year 2023-2024, distributed across 42 government and charitable hospitals in India.

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**DR. PRADEEP CHANDRAKAR**

Professor Radiation Oncology

Regional Cancer Centre

Pt .J. N. M. Medical College, Raipur

“Kids with cancer are usually malnourished because of their extra calorie needs and poor nutrition due to loss of appetite, poverty, lack of education etc. Starting any kind of treatment in these children is very difficult and challenging, as they may succumb to infection and other complications of treatment. Nutrition support in such patients is not only important but also very crucial for their journey to fight against cancer and win the race.”

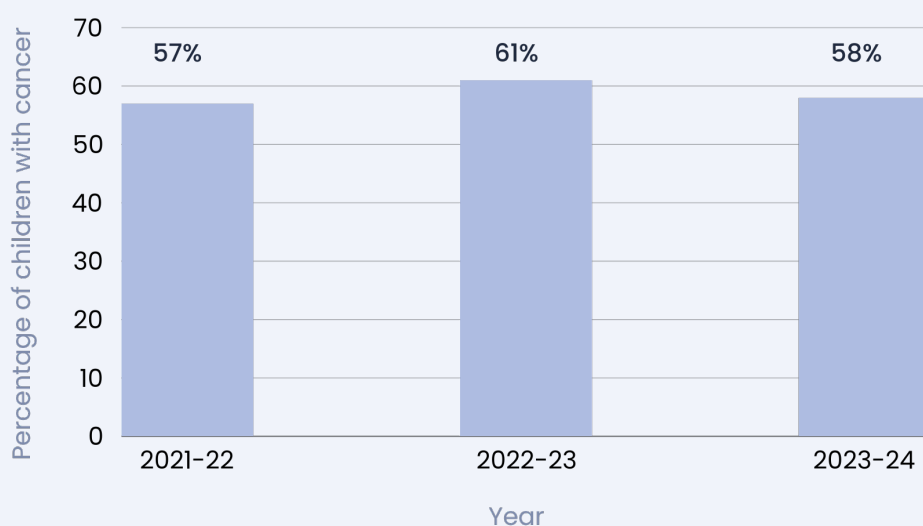


# Section B: Undernourishment in Children with Cancer

## ▶ Trend of undernourishment at initial visit\*

Undernutrition among children with cancer has remained a persistent problem for the past 3 years

Percentage of children who were undernourished at their initial visit



The percentage of undernourished children with cancer at their initial visit has shown little change over the past 3 years, indicating that this issue continues to be a significant challenge. Malnutrition (both undernutrition and over nutrition) significantly impacts the health and treatment outcomes of children with cancer, emphasising the critical need for effective nutritional support and interventions in paediatric oncology care.

The latest Indian Consensus Guidance and Recommendation on Nutritional Management and Paediatric Cancer Patients (from IAPEN) published in 2024 calls for mandatory nutritional assessment of all children with cancer.<sup>4</sup>

\*Analysis includes patient covered by the FoodHeals app from April 2021 - March 2024



# Story of 3.6 year old boy diagnosed with Neuroblastoma#

## 24 hour Dietary Recall

In 24 hours, the child consumed 1 cup of sattu porridge in the morning followed by half a banana in the afternoon.



½ Banana



Sattu porridge 1 cup

“When I first met this child, he was severely malnourished, showing a significant loss of appetite and weight. The persistent irritability and abdominal pain, coupled with a prolonged history of intermittent fever contributed to poor nutritional status. The severe loss of appetite and vomiting episodes further exacerbated the situation as the child was not able to consume adequate food and had a very poor dietary recall meeting only about 13% of his daily requirements of energy. It was clear that a comprehensive nutritional intervention was urgently required.”

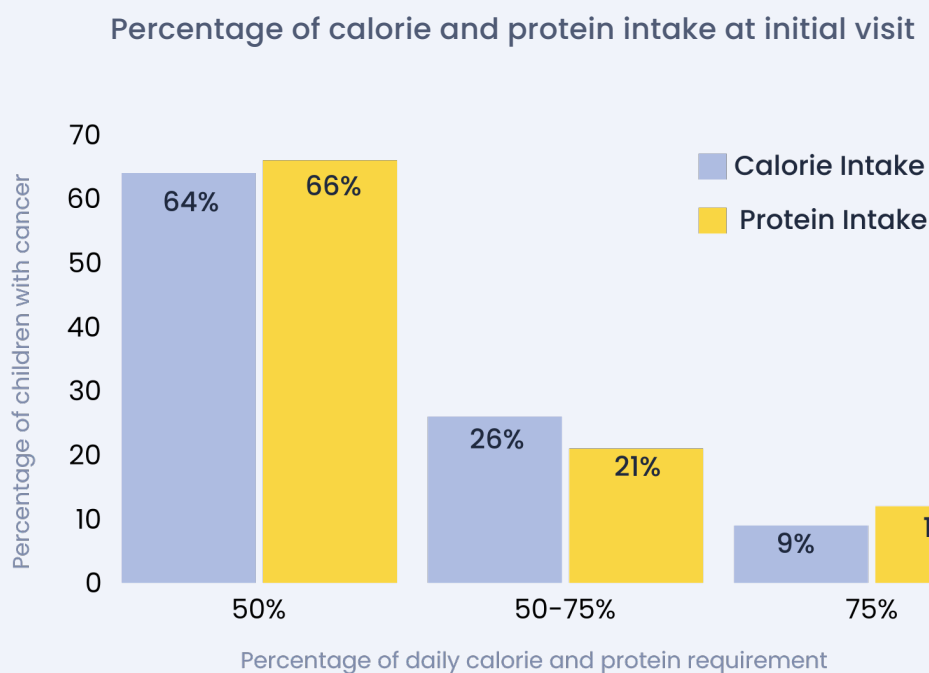
**GARIMA YADAV**

Paediatric Oncology Nutritionist



## ▶ Average Daily Calorie and Protein Intake\*

Around 65% of children with cancer are eating less than half of the calorie and protein they need each day.



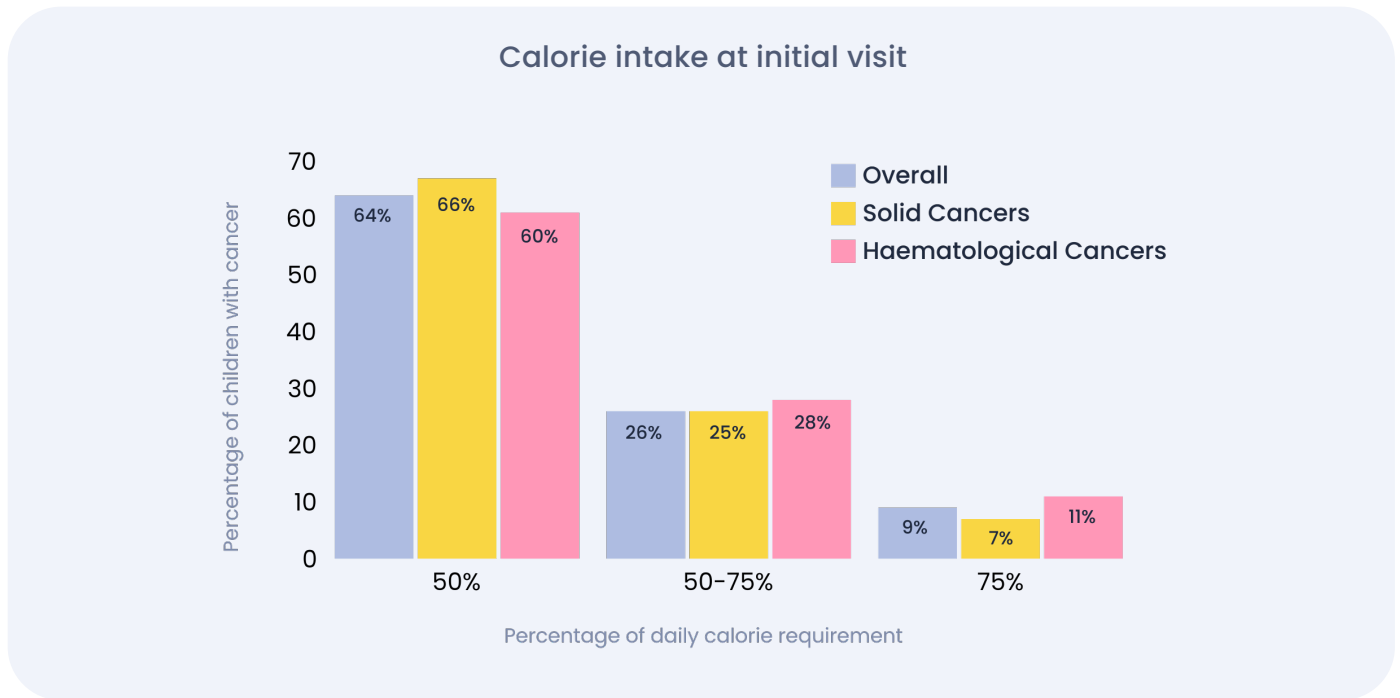
Research indicates that children with cancer require 20–90% more calories than healthy children. Adequate calorie and protein intake is crucial for supporting tissue healing, energy needs, growth, and development in these young patients.<sup>5</sup>

However, appetite suppression, vomiting, nausea, and other side effects of cancer treatments can significantly hamper a child's ability to meet their calorie needs. Such inadequate nutrition can lead to reduced tolerance to treatment, increased risk of infections, and compromised growth and development, underscoring the critical need for targeted nutritional support in paediatric oncology care.<sup>6</sup>

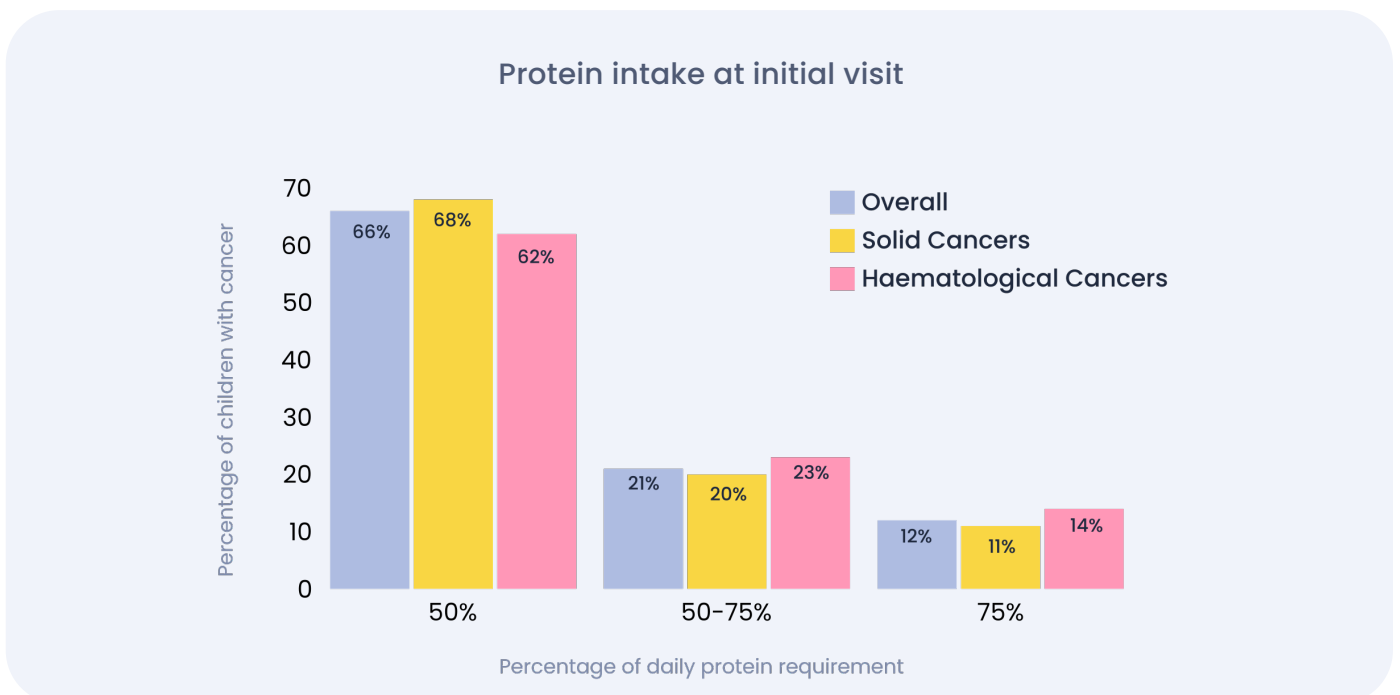
\*This statistic was derived from a one-day dietary recall and current food intake patterns collected from 5,000+ patients during their initial visit by a Cuddles Foundation nutritionist in the financial year 2023-2024.

## ► Comparison of intake metrics between patients with Solid and Haematological Cancers\*

Children with solid cancers are the most severely impacted, with many consuming less than half of their daily calorie and protein needs. This significant nutritional gap worsens their already fragile health, underscoring the urgent need for focused nutritional interventions.



Nutrition support is necessary if a patient consumes less than 50% of their daily calorie requirement for more than 7 days. (IAPEN Guidance Recommendations)<sup>3</sup>

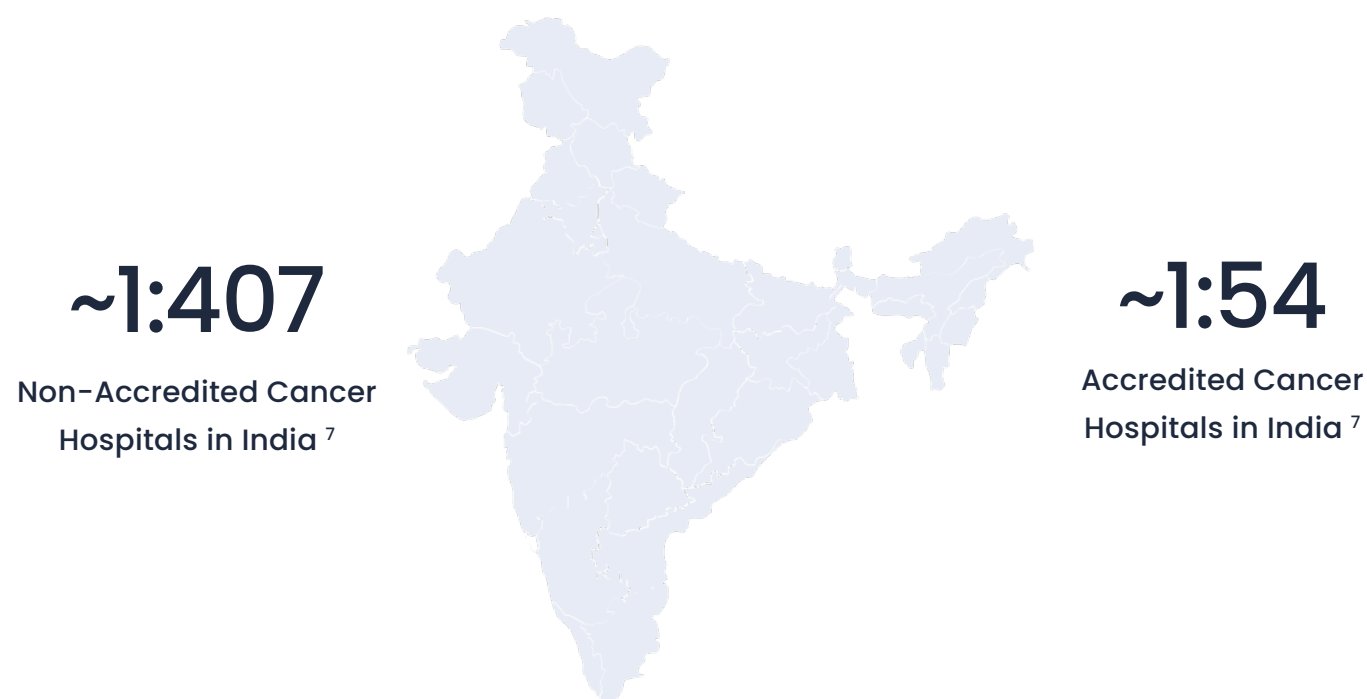


\*This statistic was derived from a one-day dietary recall and current food intake patterns collected from 5,000+ patients during their initial visit by a Cuddles Foundation nutritionist in the financial year 2023-2024.

# Section C: Advocating for Specialised Nutritionists and Targeted Nutrition Interventions

## ► Nutritionist to Patient ratio

Current disparity in nutritionist to patient ratio underscores the urgent need for increased investment in nutrition services within the healthcare system.



Nutritional care, which has been proven to influence the course of cancer treatment positively, is often overlooked in the childhood population. This oversight is especially critical given that childhood is a period of rapid growth and development.

**Higher nutritionist to patient ratios can lead to better treatment outcomes**

Although there is a lack of guidance on an ideal nutritionist to paediatric cancer patient ratio, higher nutritionist to patient ratios enable more frequent and personalised nutritional assessments, crucial for early detection and management of malnutrition during cancer treatment. This specialised care can significantly enhance treatment outcomes and long-term health.<sup>8</sup>

# ► Nutrition Care Process for Paediatric Cancer: A Personalised Approach

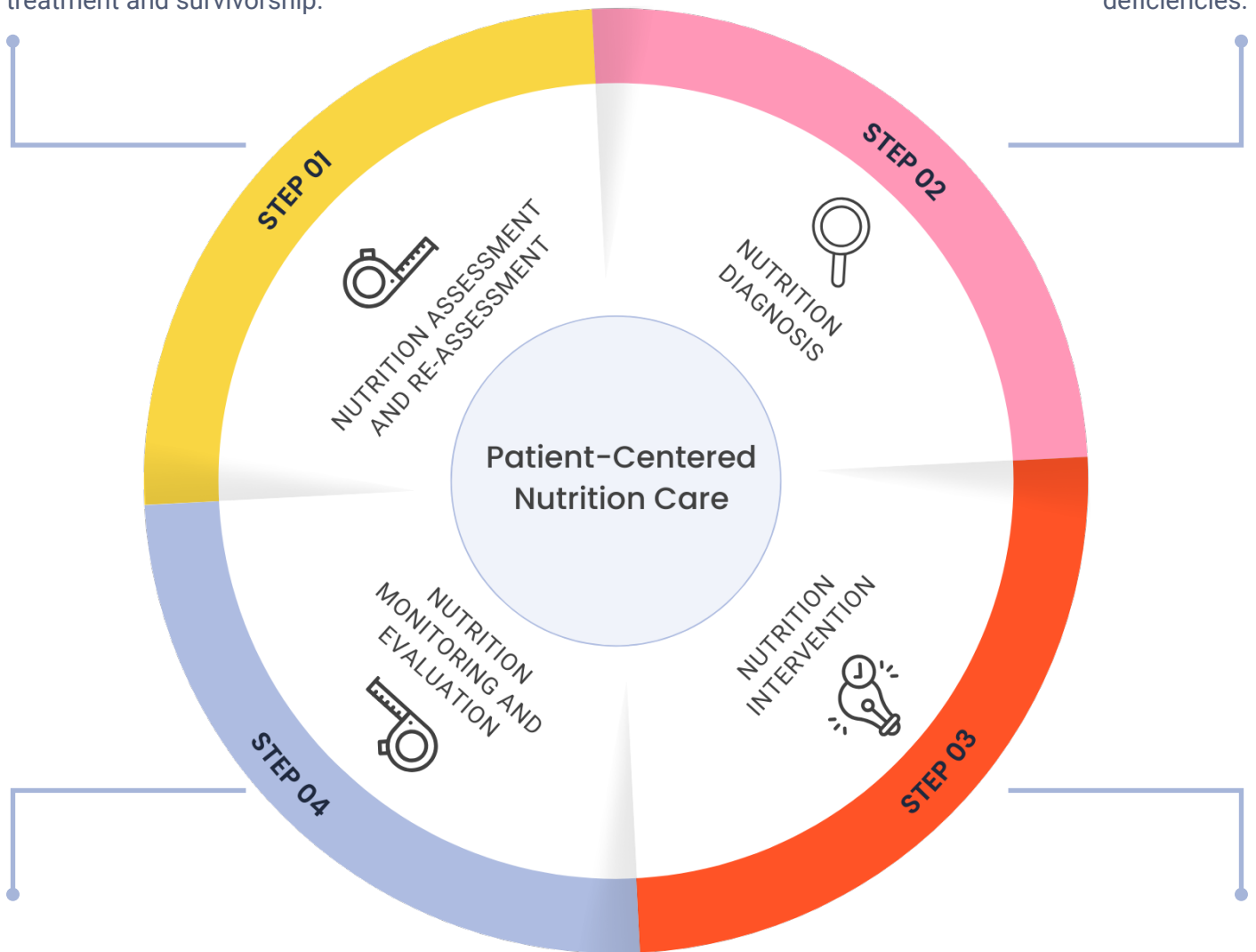
The gap in patient to nutritionist ratios is a critical barrier to provide effective nutrition support and implementing a thorough Nutrition Care Process (NCP). A nutritionist in paediatric oncology plays a crucial role in the NCP and this disparity directly impacts the quality of individualised care that each child with cancer receives.

## Step 01

Gather, document, and interpret nutrition-related patient data.  
Repeat periodically throughout treatment and survivorship.

## Step 02

Identify nutritional problem, etiology and cause, and evaluate presence of signs and symptoms of nutrition deficiencies.



## Step 04

Closely track patient progress and alleviation of the problem.

## Step 03

Design, prescribe, and implement nutrition therapy.

**Nutrition Care Process Model**

# Story of 4 year old girl, diagnosed with Stage 4 neuroblastoma<sup>#</sup>

Upon admission, she was severely malnourished, unable to eat due to vomiting and fever. We started a nutritional plan with oral and enteral tube feeds, which initially stabilized her. However, chemotherapy brought severe side effects, including persistent stool bleeding, renal issues, and a viral infection.

Despite ongoing oral and enteral feeding, her weight continued to drop due to absorption problems, requiring a switch to total parenteral nutrition (TPN) and urgent surgery. Through constant monitoring and adjustments to her nutritional plan her weight increased from 8.7 kg to 11.5 kg, with significant improvements in muscle mass and strength. This progress has greatly improved her health and prepared her for major upcoming surgery, highlighting the critical role of a personalised nutrition plan in supporting a child's nutritional status during her fight against cancer.

~Nutritionist Jahnvi Deo



# ▶ Adequate Nutrition Improves Outcomes

Undernutrition can negatively impact paediatric patients short-term and long-term outcomes.<sup>7,9,10</sup>

**Short term:** Delay in treatment, increased susceptibility to infections, altered drug metabolism and increased toxicity, decreased quality of life, poor overall survival and event-free survival and increased risk of relapse

**Long term:** Decreased bone mineral density, increased risk of early onset of chronic diseases such as diabetes, cardiovascular disease and obesity and increased risk for secondary cancers

Given that growth is a fundamental aspect of childhood development, nutritional interventions should not only prevent malnutrition but also actively support growth in accordance with a child's genetic potential.<sup>11</sup>

“

Over years of my practice, I have observed the extra challenges a child faces while battling cancer due to co-existing malnutrition. Interventions focused on nutrition have definitely improved the treatment tolerance and compliance of these children and in turn improving their outcome. Parents feel confident and comfortable regarding how to feed their children while on treatment because of multiple counselling and guidance provided by the nutritionists. Nutritionists with expertise in Paediatric Oncology play a crucial role in any Paediatric Oncology centre as a team to deliver quality treatment to the affected children.

**DR. VINOD GUNASEKARAN**

MD, FNB Senior Consultant,  
Paediatric Haematology Oncology & BMT,  
Kauvery Hospital, Trichy.



# Section D:

## Recommendations

Paediatric cancer patients have constantly evolving nutritional needs, making a dedicated Nutrition Care Process essential for meeting their specific dietary requirements and optimising treatment outcomes. This structured approach requires specialised nutritionists in multidisciplinary paediatric oncology teams to deliver customised nutritional support.



**Implement Specialised Nutrition Care**



**Integrate Trained and Specialised Nutritionists**



**Increase Funding and Training for Nutritionists**

To enhance care, it is crucial to boost funding for paediatric oncology units and invest in specialised training programs. Ensuring that nutritionists receive the necessary education and resources, while maintaining higher nutritionist to patient ratios, allows for personalised nutrition care, ultimately leading to better health outcomes and improved quality of life for children undergoing cancer treatment.



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A special note of thanks to the caregivers of our young beneficiaries, whose strength and dedication in the face of adversity continue to inspire us. Your willingness to share your experiences and challenges has enriched this report and reminded us of the crucial role that family plays in a child's journey to recovery.

We are also immensely grateful to Dr. Manas Kalra for the foreword, Dr. Pradeep Chandrakar and Dr. Vinod Gunasekaran for their quotes which have contributed to enhancing the depth and impact of this report.

We also acknowledge the tireless efforts of everyone involved, from our nutritionists to the administrative staff, volunteers, and consultants who work daily to improve the lives of these young warriors. Your dedication has made a significant impact, and we are deeply grateful for your ongoing support and partnership in this vital mission.

And finally, our donors for believing in us and supporting our mission to give every child fighting cancer a chance at a cure.

Warmly,  
Cuddles Foundation

# About Cuddles Foundation



Founded in 2013, Cuddles Foundation is India's only nonprofit dedicated to providing nutrition support to underprivileged children battling cancer. Working with 42 public hospitals across 14 states, we equip government and charity cancer hospitals with trained paediatric oncology nutritionists and food aid to improve treatment outcomes. Cuddles Foundation received the National Award for Child Welfare in 2015-16, the Panna Dhai Award in 2020, and the Top 10 Best NGOs of the Year 2024 award by Brand Honchos. Our vision is to give every child fighting cancer in India a chance at a cure.

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