



INDIAN ACADEMY OF PEDIATRICS

PEDIATRIC HEMATOLOGY-ONCOLOGY CHAPTER

Regd. Office: Kailas Darshan, Kennedy Bridge, (Nana Chowk), Mumbai 400007 (India)
Society Regn. No. Maharashtra State, Mumbai 1828/2006 200 GBBSD

Concept Note

National Training Project – Practical Pediatric Oncology (NTP-PPO)

A National Capacity Building Initiative for Early Recognition, Timely Referral and Shared Care of Childhood Cancer

Prepared by

**Pediatric Hematology Oncology (PHO) Chapter
Indian Academy of Pediatrics (IAP)**

Purpose of this Concept Note

This concept note provides an overview of the **National Training Project – Practical Pediatric Oncology (NTP-PPO)**, a flagship educational initiative of the Pediatric Hematology Oncology (PHO) Chapter of the Indian Academy of Pediatrics. It outlines the programme's vision, objectives, educational framework and implementation model to support national efforts aimed at strengthening early diagnosis, timely referral and shared care of children with cancer.

The document is intended to facilitate discussions on capacity building of healthcare professionals and explore opportunities for collaboration in strengthening childhood cancer services within existing national child health and cancer control programmes.

Background

Childhood cancer is an important public health challenge in India, with an estimated **50,000–60,000** new cases diagnosed annually. Advances in pediatric oncology have resulted in survival rates exceeding 80% in high-income countries, and similar outcomes are increasingly achievable in India when children are diagnosed early and treated at specialized centres. Despite these advances, delayed diagnosis, delayed referral, treatment abandonment and limited awareness among frontline healthcare providers continue to contribute to poorer outcomes.

Pediatricians and primary care physicians are often the first point of contact for children with cancer. Their ability to recognize the early warning signs of childhood malignancies, initiate appropriate investigations, provide initial stabilization and ensure timely referral is fundamental to improving survival.

Recognizing this need, the **Pediatric Hematology Oncology (PHO) Chapter of the Indian Academy of Pediatrics**, in collaboration with the **International Society of Pediatric Oncology (SIOP)**, established the **National Training Project – Practical Pediatric**



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Oncology (NTP-PPO) in 1997. Developed as a structured educational initiative, the programme aims to build the capacity of pediatricians through standardized, practical and evidence-based training in childhood cancer. Since its inception, the programme has evolved continuously through periodic revision of its curriculum while maintaining its focus on practical clinical decision-making and shared care.

Vision

To ensure that every child with cancer in India is recognized early, referred promptly and receives timely, evidence-based care irrespective of geography or available resources.

Mission

To strengthen the knowledge, clinical skills and confidence of pediatricians and healthcare professionals through standardized education in childhood cancer, thereby improving early diagnosis, referral, supportive care and shared management across India.

Aim

To improve childhood cancer outcomes by strengthening the capacity of pediatricians and healthcare professionals to recognize, evaluate, stabilize and appropriately refer children with suspected malignancies while supporting comprehensive shared care throughout treatment and survivorship.

Objectives

The National Training Project aims to:

- Improve awareness and early recognition of childhood cancers among pediatricians and healthcare professionals.
 - Promote timely referral to specialized pediatric hematology-oncology centres.
 - Standardize pediatric oncology education through a nationally developed curriculum.
 - Strengthen the role of pediatricians in the shared care of children undergoing cancer treatment.
 - Contribute towards reducing diagnostic delays, minimizing treatment abandonment and improving childhood cancer outcomes.
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Programme Framework

The NTP-PPO is a competency-based educational programme delivered by experienced pediatric hematology-oncology faculty across India. It combines interactive lectures, problem-



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oriented discussions, clinical case scenarios, practical skill stations and structured assessment to enhance clinical decision-making and practical skills.

The standardized curriculum addresses the continuum of childhood cancer care, including:

- Early recognition and warning signs
- Diagnostic approach and referral pathways
- Principles of pediatric oncology
- Common childhood malignancies
- Pediatric oncology emergencies
- Supportive care
- Nutrition
- Safe chemotherapy practices
- Blood component therapy
- Shared care
- Pain, palliative care and survivorship

The programme is delivered in flexible formats, including two-day comprehensive workshops, one-day condensed programmes and focused awareness sessions, enabling adaptation to regional training requirements while maintaining uniform educational standards.

Expected Outcomes

Participants completing the programme are expected to:

- Recognize the early clinical features of childhood cancers.
- Initiate appropriate first-line evaluation.
- Identify pediatric oncology emergencies requiring urgent intervention.
- Stabilize children before referral.
- Counsel families regarding timely referral and treatment adherence.
- Collaborate effectively with tertiary pediatric oncology centres.
- Participate confidently in shared care during treatment and follow-up.

National Relevance

The National Training Project aligns closely with national priorities to strengthen childhood cancer care through healthcare workforce development, early diagnosis and efficient referral systems.

The programme supports efforts to:

- Improve early diagnosis of childhood cancer.
- Build capacity of pediatricians and frontline healthcare providers.



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- Strengthen referral pathways.
- Promote standardized clinical practice.
- Enhance collaboration between district hospitals, medical colleges and tertiary pediatric oncology centres.
- Improve treatment outcomes and quality of care.

With nearly three decades of experience, a standardized curriculum and a national faculty network, the NTP-PPO provides a scalable and sustainable model that can support national strategies for strengthening childhood cancer services across India.

Way Forward

The PHO Chapter is committed to continued collaboration with the Ministry of Health & Family Welfare, NHSRC, ICCI and other stakeholders to strengthen pediatric oncology capacity building across the country.

Potential areas of collaboration include:

- Expansion of standardized pediatric oncology training programmes.
- Faculty development and training-of-trainers initiatives.
- Development of digital and hybrid learning platforms.
- Integration with national child health and cancer control initiatives.
- Periodic curriculum review and programme evaluation.

Conclusion

The **National Training Project – Practical Pediatric Oncology (NTP-PPO)** represents one of India's longest-running and most comprehensive educational initiatives dedicated to improving childhood cancer outcomes through capacity building of pediatricians. By promoting early recognition, timely referral, evidence-based supportive care and shared management, the programme provides a strong foundation for strengthening childhood cancer services and improving survival across the country.



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Programme Overview

National Training Project – Practical Pediatric Oncology (NTP-PPO)

A National Capacity Building Initiative for Early Recognition, Timely Referral and Shared Care of Childhood Cancer

**Pediatric Hematology Oncology (PHO) Chapter
Indian Academy of Pediatrics (IAP)**

Programme Ownership and Governance

The **National Training Project – Practical Pediatric Oncology (NTP-PPO)** is an academic programme conceived, developed and governed by the **Pediatric Hematology Oncology (PHO) Chapter of the Indian Academy of Pediatrics**.

The programme curriculum, workshop manuals, educational modules, faculty presentations, assessment tools, case-based learning resources, participant workbooks and all associated educational materials have been developed by the PHO Chapter through the collective contributions of pediatric hematology-oncology experts across India over nearly three decades.

These educational resources constitute the **academic and intellectual property of the PHO Chapter, Indian Academy of Pediatrics**. The curriculum is periodically reviewed and updated to ensure scientific accuracy, alignment with contemporary evidence and uniformity of training across the country.

The PHO Chapter remains committed to working collaboratively with the **Ministry of Health & Family Welfare, NHSRC, ICCI, State Governments, medical colleges and other professional organizations** to strengthen national capacity in childhood cancer care. Any implementation, adaptation or expansion of the NTP-PPO should be undertaken in partnership with the PHO Chapter to maintain academic quality, standardization and programme integrity.

Programme Objectives

The programme aims to enable participants to:

- Recognize the early warning signs of childhood cancers.
- Develop a systematic approach to diagnosis and referral.
- Understand the principles of multidisciplinary pediatric oncology care.
- Recognize and manage common pediatric oncology emergencies.
- Strengthen supportive care practices.



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- Promote effective shared care between pediatricians and pediatric oncology centres.
- Improve long-term outcomes through timely intervention and coordinated care.

Target Participants

The programme is designed for:

- Pediatricians
- Pediatric postgraduate trainees
- Medical officers
- Medical college faculty
- Pediatric surgeons
- Nursing professionals (selected modules)
- Allied healthcare professionals involved in childhood cancer care

Educational Methodology

The NTP-PPO follows a competency-based educational model with emphasis on practical clinical application. Learning is delivered through:

- Interactive lectures
- Problem-oriented clinical discussions
- Clinical case scenarios
- Image-based learning
- Practical skill stations
- Small-group discussions
- Faculty-led interactive sessions
- Structured pre- and post-course assessments
- Participant feedback and certification

The curriculum emphasizes practical decision-making and skills that can be immediately applied in day-to-day pediatric practice.



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Programme Structure

Table 1. NTP-PPO Curriculum Framework

M od ul e	Topic	Scope and Learning Objectives
1	Introduction to Childhood Cancer	Burden of childhood cancer, epidemiology, curability, multidisciplinary care, role of PHO Chapter, NTP-PPO and importance of early diagnosis.
2	Approach to Childhood Cancer & Red Flag Signs	Recognition of warning signs, systematic evaluation, initial investigations, referral pathways and prevention of diagnostic delay.
3	Principles of Management in Pediatric Oncology	Diagnosis, staging, risk stratification, multimodality treatment, multidisciplinary care, communication with families and supportive care principles.
4	Approach to Abdominal Masses	Evaluation of Wilms tumour, neuroblastoma, hepatoblastoma and lymphoma, including clinical approach, imaging and referral.
5	Approach to Extremity Masses	Diagnostic approach to bone and soft tissue tumours including osteosarcoma, Ewing sarcoma and rhabdomyosarcoma.
6	Approach to Lymphadenopathy	Evaluation of persistent lymphadenopathy, differentiation between benign and malignant causes, and approach to leukemia and lymphoma.
7	Retinoblastoma and Orbital Masses	Recognition of leukocoria, proptosis and orbital tumours, urgent referral and overview of management principles.
8	Acute Leukemias in Children	Clinical presentation, interpretation of CBC, diagnostic evaluation, supportive care and referral.
9	Brain Tumours in Children	Neurological red flags, raised intracranial pressure, imaging, referral and multidisciplinary management.
10	Pediatric Oncology Emergencies	Recognition and emergency management of febrile neutropenia, tumour lysis syndrome, superior vena cava syndrome, spinal cord compression and hyperleukocytosis.



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Module	Topic	Scope and Learning Objectives
11	Shared Care in Childhood Cancer	Role of pediatricians during treatment, toxicity monitoring, infection prevention, follow-up, communication with oncology centres and survivorship.
12	Nutrition in Pediatric Oncology	Nutritional assessment, rehabilitation and nutritional support throughout cancer treatment.
13	Blood Component Therapy (Skill Station)	Principles of safe transfusion practices, blood component therapy and management of transfusion-related complications.
14	Safe Chemotherapy Administration (Skill Station)	Chemotherapy safety, vascular access devices, administration principles, prevention of medication errors and management of extravasation.
15	Pain, Palliative Care and Survivorship	Pain management, symptom control, communication, palliative care, survivorship and long-term follow-up.
16	Interactive Case-Based Learning	Integration of clinical knowledge through real-life case discussions emphasizing diagnosis, emergencies, referral and multidisciplinary care.
17	Assessment and Certification	Pre-test, post-test, competency assessment, participant feedback and certification.

Programme Formats

Programme Format	Description
Two-Day Comprehensive Workshop	Complete curriculum including lectures, clinical discussions, skill stations, case-based learning, assessments and certification.



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Programme Format	Description
One-Day Condensed Programme	Focused training covering early diagnosis, common pediatric malignancies, emergencies, supportive care and shared care.
Half-Day Awareness Programme	Introductory programme emphasizing warning signs, referral pathways and the role of pediatricians in childhood cancer care.

The curriculum may be delivered in different formats depending on local requirements while maintaining standardized educational objectives.

Assessment Strategy:

Assessment is an integral component of the programme and includes:

Before the Programme

- Participant registration
- Baseline MCQ assessment
- Learning needs assessment

During the Programme

- Interactive clinical discussions
- Faculty feedback
- Skills assessment
- Case-based learning

At Programme Completion

- Post-course MCQ assessment
 - Participant feedback
 - Competency evaluation
 - Certificate of participation
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Expected Competencies

National Relevance

The NTP-PPO complements national efforts to strengthen childhood cancer care by improving the knowledge and skills of pediatricians and frontline healthcare providers. Through standardized education, it supports early diagnosis, timely referral, shared care and improved coordination between district hospitals, medical colleges and tertiary pediatric oncology centres.

With an established curriculum, experienced national faculty and nearly three decades of implementation, the programme offers a robust and scalable model for strengthening pediatric oncology capacity across India.

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The National Training Project – Practical Pediatric Oncology (NTP-PPO), including its curriculum framework, workshop manuals, educational content, faculty presentations, assessment tools, case-based learning resources and all associated teaching materials, is the academic and intellectual property of the Pediatric Hematology Oncology (PHO) Chapter of the Indian Academy of Pediatrics. Any reproduction, adaptation, implementation or dissemination of these educational resources, in whole or in part, should be undertaken with the knowledge and permission of the PHO Chapter to preserve academic integrity, quality assurance and national standardization.