

# Current Trends in Care of Pediatric Oncology and Aspects of Nursing Care

Sudha Singh Mohey

## How to cite this article:

Sudha Singh Mohey, Current Trends in Care of Pediatric Oncology and Aspects of Nursing Care. Int J Pediatr Nurs. 2021;7(1):27–32.

**Author's Affiliations:** Associate professor, Department of Nursing, Mansarovar Nursing College, Bima Kunj, Mansarovar Campus Opposite, Bhopal, Madhya Pradesh 462042.

**Corresponding Author:** Sudha Singh Mohey, Associate professor, Department of Nursing, Mansarovar Nursing College, Bima Kunj, Mansarovar Campus Opposite, Bhopal, Madhya Pradesh 462042.

**E-mail:** [sudhasinghmohey2013@gmail.com](mailto:sudhasinghmohey2013@gmail.com)

## Abstract

The rate of disease in adolescence is increasing. It is assessed that the rate of youth malignant growth in the United States is expanded by 0.6% year. The most well-known malignancy type in adolescence is leukemia. Advances in the treatment of youth disease have been demonstrated an improvement in guess in ongoing years. Therefore, survivor pace of kids with malignancy is going to ascend in the past decade. Expanded occurrence of kids determined to have malignancy has prompted changes in the treatment and visualization of the infection just as in nursing care. In this audit article, it is meant to survey the new patterns and ongoing consideration approaches in pediatric oncology nursing. We could state that the writing, particularly in the course of recent years, for the most part centred around the subjects as family-focused consideration, innovation based consideration, program advancement, essential consideration of youngster, medicinal services supplier, survivors and home consideration, and non-pharmacological care. Every classification could collaborate with one another. The entirety of the themes in the classes add to perform proof based consideration. Human services benefits in the present social orders require proof based practices across disciplines. Principles, rules, and reports could be utilized in explicit care.

**Keywords:** Oncology; Leukemia; Myelogenous Leukemia; Neuroblastoma; Wilms' Tumor; Radioisotope.

## Introduction

A disease conclusion is upsetting at any age, yet particularly so when the patient is a child. It is normal to have numerous inquiries, for example, who should treat my kid, Will my kid recover, what does the entirety of this mean for our family, not all inquiries have answers, yet the data and assets on this page give a beginning stage to understanding the essentials of youth malignant growth. Expanded frequency of kids determined to have malignant growth and survivors was an effect on changes in pediatric hematooncology nursing care. In this survey article, it is planned to explore the new patterns and late consideration approaches in pediatric oncology nursing. The ongoing consideration points were normal in the writing as family-focused consideration, innovation based consideration, program improvement, essential consideration of kid, social insurance supplier, survivors and home consideration, and non-pharmacological care. The entirety of the subjects add to perform proof based consideration for wellbeing advancement and prosperity in pediatric hemato-oncology nursing. Exploration audits indicated that numerous current themes for the consideration of youngsters and their folks have entered in the writing. There is a requirement for progressively randomized controlled investigations to improve the degree of proof of new nursing draws near.<sup>1</sup>

**Definition:** Pediatric cancer is a cancer in among children in which the abnormal growth of cells occurs in age group of 0 to 14 years.

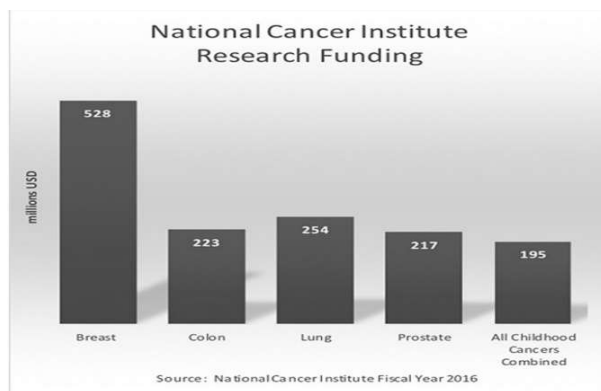
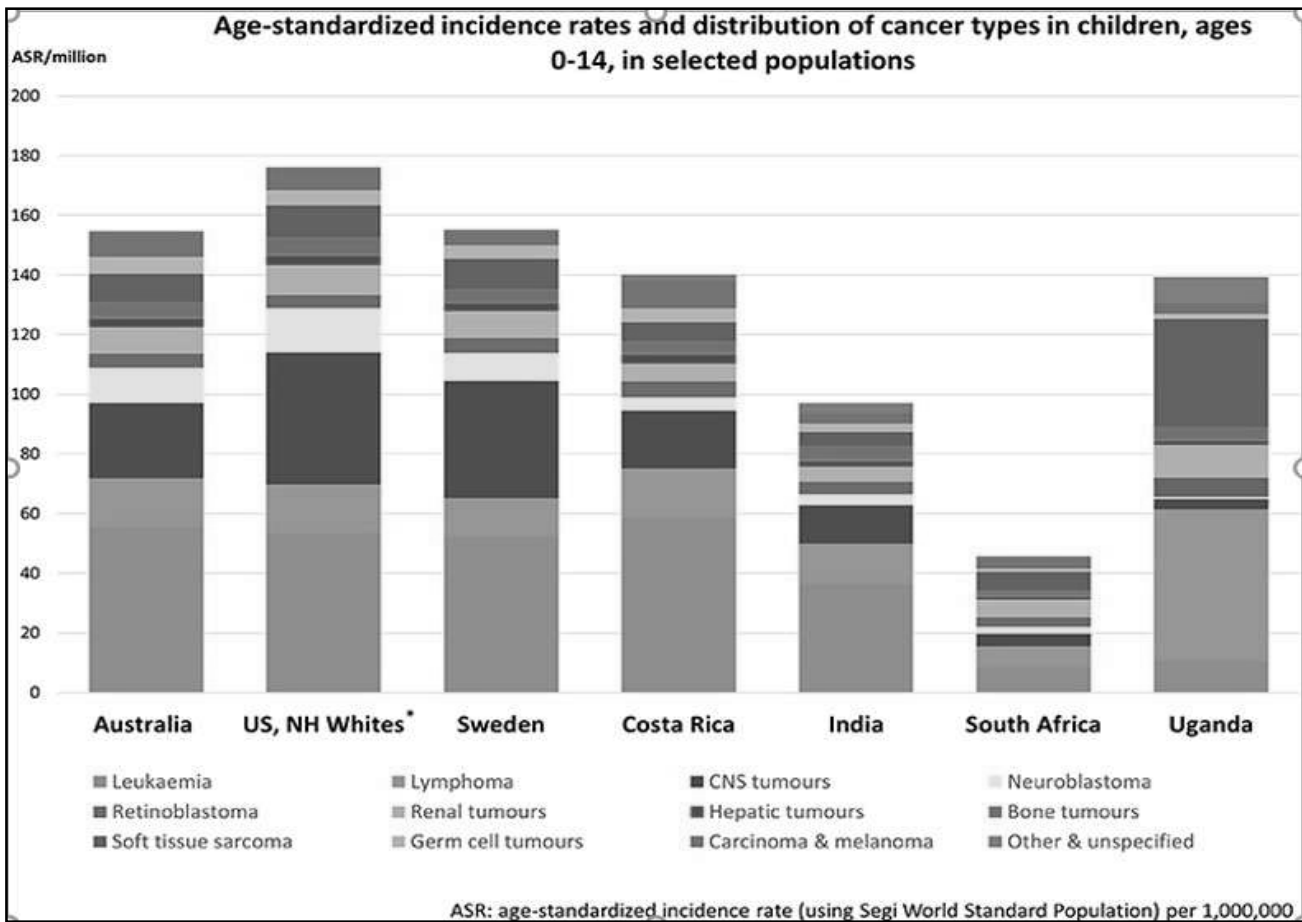
**Current Scenario of Pediatric Oncology Cases:**

Observed age-standardized incidence rates and distribution of cancer types in children, ages 0–14 in selected populations, ordered by degree of socioeconomic development. Data compiled from the International Incidence of Childhood Cancer, Volume III, 12 and cancer register data from Costa Rica, 25 and South Africa, 26. Diagnostic groups defined according to the International Classification of Childhood Cancer, including non-malignant intracranial and intraspinal tumors. Exceptions are the CNS tumor rates of Costa Rica, India, South Africa, and Uganda; these rates do not include non-malignant brain tumors 2 (Graph 1).

### *Patterns of Childhood Cancer Incidence in Various Countries*

Populace based malignant growth vaults around the globe report generally speaking occurrence rates for youth disease that fluctuate by a factor of around four, between under 60 to more than 200 for every million every year. The financial improvement of a populace is by all accounts related with the detailed occurrence of youth malignancy in the separate country. This is reflected in the higher frequency rates announced for HICs, especially for intense lymphoblastic leukemia, the most well-known disease type in youngsters in HICs, and for disease in babies, contrasted with low-and center pay nations. Children malignancy occurrence designs are comparative and all around portrayed for high-asset nations, with ongoing age-normalized frequency of cases is 155, 176, and 155 for each million youngsters being accounted for Australia, US Non-Hispanic Whites, and Sweden, separately.

Graph 1: At worldwide level.



Graph 2: National level Scenario.

Interestingly, top notch information from LMICs is restricted and announced occurrence designs are different. Occurrence cases of 140, 97, 46, and 139 for every million have been accounted for Costa Rica, India, South Africa, and Kampala in Uganda, with considerable varieties in the conveyance of malignant growth types among LMICs and in contrast with HICs. For instance, in Sub-Saharan Africa, Burkitt lymphoma, Hodgkin lymphoma, Kaposi sarcoma, or hepatocellular carcinoma are more continuous (Graph 2). Then again, in some LMICs, especially in Sub-Saharan Africa and parts of Asia where library information is poor, astoundingly low youth leukemia rates have been noticed. Interestingly, occurrence paces of intense lymphoblastic leukemia for some Latin-American nations rank among the most noteworthy on the planet, while lower frequency rates contrasted with HICs are noticed for moststrong tumors including dangerous focal sensory system

tumors. In any case, assessing and looking at the occurrence of children malignancy around the world is hindered by an absence of solid information for a considerable of piece LMIC.<sup>3</sup>

**Types of Pediatric Oncology Strategies**

*Medical Oncology:* Dealing with malignant growth by utilizing approaches like chemotherapy, immunotherapy, hormonal treatment and focused on treatment is known as Medical Oncology.

*Radiation Oncology:* A specific division in medication that permits radiation in treating malignancy with the target of relieving it, decreasing the agony or some other indications set off by disease is known as radiation oncology or radiation treatment.

*Surgical Oncology:* This specific division of medical procedure has been shaped to distinguish, review and afterward give treatment to malignancy and a number disease related indications. Careful oncology has been suggested in blend with corresponding therapies for malignancy, for instance, chemotherapy, radiation treatment, and immunotherapy and focused on treatment which might be regulated either previously or after the surgery.

*Bone Marrow Transplantation:* An operation by which red blood cells are imbued into your body to replace the debilitated or polluted bone marrow is known as a bone marrow relocate. Where the body can't create the essential measures of solid platelets, a bone marrow relocate might be vital. A bone marrow relocate might be utilized to re-establish another unsusceptible framework in the body or even supplant the bone marrow that has been obliterated by high portions of chemotherapy and radiation. The bone marrow relocate should be possible by two

strategies – either by utilizing the patient's own bone marrow or by utilizing the bone marrow from a giver.

**Robotic Surgery:** robotic surgical procedure is a medical procedure is presently being utilized to treat a wide range of disorders and problems. A critical factor behind such wide acknowledgment of robotic surgery is a medical procedure is the manner in which it can deal with complex tasks with most extreme accuracy. Specialists who have been extraordinarily prepared in the robotic surgery can have all out control and flexibility over the whole working procedure which is absurd during traditional surgical activities.

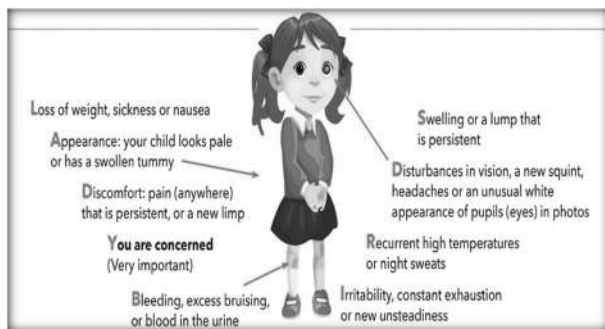
**Hyperthermic Intra-Vesical Chemotherapy:** Various difficulties should be defeated prior to transforming HIVEC into a fruitful treatment for each patient. Being an ideal cooperative energy of sympathy and innovation, our Uro-Oncology division puts each pediatric patient at the focal point of a specialist group and gives a remarkable degree of customized care to effectively perform HIVEC and treat malignant growth to improve things.

**Paediatric Oncology Areas of Care:** The mastery in treating pediatric malignant growth condition is unmatched, regardless of whether it the most widely recognized disease or the most uncommon. Following are our specialized pediatric oncological conditions.

- The oncological condition of Acute Lymphoblastic Leukemia
- The Acute Myelogenous Leukemia
- The Chondrosarcoma in children
- Chronic Myelogenous Leukemia
- The various Differentiated Thyroid Cancer
- The Ewing Sarcoma
- The condition of Hepatoblastoma
- Hodgkin Lymphoma
- Juvenile Myelomonocytic Leukemia
- Medullary Thyroid Cancer
- Neuroblastoma
- Non-Hodgkin Lymphoma in Children
- Osteosarcoma
- Pediatric Brain Tumors
- Pediatric Leukemias in children
- Relapsed or Refractory Neuroblastoma
- Retinoblastoma in pediatric group
- Rhabdomyosarcoma among kids
- Skin Cancer in Children
- Soft Tissue Sarcomas
- Wilms' Tumor

## Symptoms & Diagnosis

Possible signs and symptoms of cancer in children Signs and manifestations of malignant condition are difficult ones to distinguish in kids as they have an extremely close similarity to normal sicknesses and wounds. Albeit unprecedented in kids, the accompanying bizarre side effects may be characteristic of malignant growth on the off chance that they don't disappear.



**Fig. 1:** Possible Symptoms of pediatric oncology condition.

- An abnormal occurrence lump or swelling in body part.
- Unexplained paleness on face and lack of energy level.
- Easy signs of bruising.

- A regular pain in one part of the body
- Signs of Limping
- Raised body temperature or illness which present constantly.
- regular headaches, might with episodes of vomiting
- Sudden changes in vision.
- Sudden weight loss due to unexplained cause.

These symptoms can overlap with any common health issues like injury or infection that affect your child. However, to ensure early diagnosis, reach out to professional help if these symptoms do not subside soon. The tests to be conducted are decided on case to case basis. It is helpful to conduct the following tests under the supervision of a skilled pediatrician. Additional tests that may be used to diagnose childhood cancer include. (Fig. 1)

## Diagnostic Evaluation

- Blood investigations
- Biopsy procedure
- The Bone marrow aspiration and procedure of biopsy
- The Lumbar puncture procedure
- Ultrasonography
- Computed tomography scan
- Magnetic resonance imaging
- Positron emission tomography investigation.
- Scans or radioisotope studies

Depends upon the conditions identified the doctors select appropriate treatment later on the treatment which is received with all diagnostic investigations reflects the results.

New Treatment Strategies for Pediatric Oncology:



## Family Centred Care

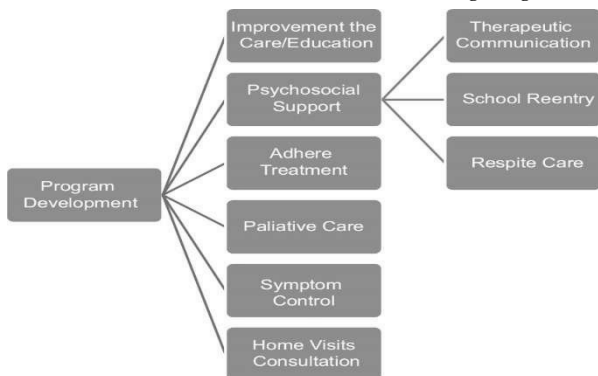
**Fig. 2:** Various family centred care paradigms.

Family-focused consideration and organization in-care models and topics, for example, dynamic and data looking for are increasingly engaged in late investigations in the field of pediatric hemato-oncology nursing. For instance, for one ongoing examination, Coyne et al. expressed that reality of the disease influences the jobs of youngsters and parent in dynamic. Youngsters engaged with minor choices (decisions about consideration conveyance) rather than significant ones to give control and trust sense. The data looking for practices and dynamic encounters of guardians of kids with disease were explored in another examination and found that guardians for the most part looked for data about their kid's ailment, treatment, and providing care issues. Besides, they characterized that guardians were coordinated fundamentally by human services suppliers during their dynamic process. One investigation centered the migrant guardians' encounters about family-focused consideration in pediatric oncology wards in Canada. They found that guardians were commonly fulfilled from this consideration. In any case, a few territories of concern distinguished like irregularity in the nature of care and mechanical way of a couple staff. In a writing search study, social and strict components of guardians in pediatric palliative

consideration about dynamic were researched and it was prescribed to give socially delicate finish of-life care on account of the dynamic status of culture.<sup>4</sup> (Fig. 2)

### Technology Based Care

For instructive and psychosocial support with innovation based intercessions, one examination was directed to evaluate the viability of a proof based site. The guardians and youngsters were given separate passwords, and they had gotten to the 140 pages about malignant growth, family, and living with disease points for a 4-month time frame. The discoveries recommend that the utilization of the site was improved the malignant growth information on kids and families. In another comparable site study, the web program including liveliness, pictures, recordings, conversation sheets, overviews, and intuitive structures comprised of 12 intelligent modules. Youths found the program acceptable and accommodating when they were first determined to have cancer. Videoconferencing is another technique used to associate kids with malignant growth to their self-teach. This innovation based mediation could furnish benefits incorporating more grounded associations with cohorts and educators, peer acknowledgment, and school reintegration. In another innovation based examination for information assortment and self-assessment, the automated side effect catch instrument dependent on iPad application was utilized to investigate the manifestations which young people experienced during the chemotherapy treatment. The side effects were researched with graphical pictures and brief, free content reactions. Members portrayed the program accommodating to comprehend their manifestations better, and indications were assembled effectively. Similar to this investigation, Baggott et al. made the Sisom, an enlivened PC device for youngsters and youngsters with incessant ailments to assess the reports of side effect. They expressed that Sisom gives an orderly and connecting with technique to assess side effects revealed from children. In another examination, kids and guardians finished the PC based side effects and personal satisfaction questions and input was given about the scores to intercession gathering. Passionate subcategory of personal satisfaction in the mediation bunch was discovered higher than control group. Furthermore, electronic video recording and information assortment could be helpful and practical on Facebook. The innovation based intercessions could be utilized for human services experts to improve proof based follow-up cares, an online emotionally supportive network for clinical choice making. For instance, an e-getting the hang of preparing program about regenerative wellbeing in the young people with malignancy for oncology medical attendants comprised of a 10-week electronic program. The educational program of the program included separation learning-based development, master e-learning conversations, brief tests, ask-the-master modules, and intelligent gathering



discussions.

Fig. 3: Pattern of oncology care.

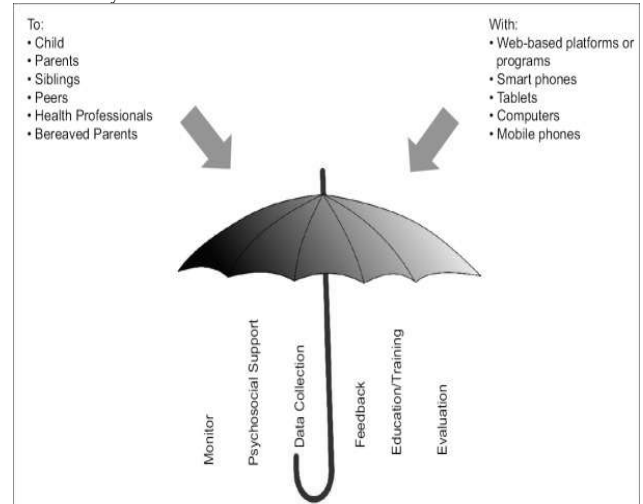
Extending the extent of innovation based mediations is an alluring objective. How fast continuous innovation based

intercessions will adjust to the oncology care settings is as of now obscure. In this manner, more innovation based intercessions are expected to improve the proof based methodologies. Building up a compelling and practicable innovation based mediation for youngsters in their development and advancement period has a wide extension and can possibly decidedly affect pediatric malignant growth care results Possible Applications of Technology Based Approaches to Pediatric Oncology Nursing Care (Fig. 3).

### Program Development Techniques

As of late, working with a dream and crucial turn of events and quality improvement of pediatric oncology settings is required to broaden the usage of projects. Result of youth disease treatment can be improved significantly by usage of projects. There are various types of projects in pediatric oncology settings, for example, helping youngsters and guardians to lessen their uneasiness, teach about ailment and treatment, follow the treatment, give side effect control, improve the mind and follow-up framework, and school remergence programs.<sup>5</sup>

In India, a social help program by voluntary organisation was actualized, and new quality improvement administrations were applied to pediatric oncology patients. The consequences of the program were as a decrease in holding up time in the emergency clinic, diminished in uneasiness levels, better medication consistence, and improved follow-up. On the other hand, a finish of-life program was comprised to assess the results for kids with brain tumors. Program was incorporated four parts: consistently conversations, medicines for manifestation control, family interview, and home visits. Patients who got the program were less hospitalized and preferable manifestation the executives over the control group. Another study was directed to decide the impact of a 5-day program including drawing, composing, and shared narrating strategies on the anxiety level of children aged of 9-16 years going through malignancy treatment in medical clinic. They found that nervousness level of kids was lower after



the intercession than starting.

Figure 4: Program development aspects.

A program was comprised for children with acute lymphoblastic leukemia, moreover. Yeh et al. researched the impacts of the locally established home based program on decreasing lethargy in these kids. It was resolved in the primary examination that weakness level has diminished in the mediation bunch contrasted with the control group. In another investigation for parents and kids of pediatric oncology patients, a break care program was created, and the relief care suppliers were emergency clinic volunteers went to a 3 h reprieve care instructional course. Purposes behind the guardian relief care demand incorporated a need to leave the clinic for brief periods like eating a meal or conversing with the clinical group. Parental

figures and staff fulfilment level were discovered higher about the program. On the other hand, Helms et al. audited the school reemergence programs for kids with disease. They expressed that these projects have critical impact to upgrade scholastic accomplishment and lessening the degrees of melancholy in children. (Fig. 4)

**Treatment Pattern**

Treatment and suggestions differ contingent upon the elements like sort and phase of disease, pediatric general wellbeing, and possible results.

- Surgery
- The Chemotherapy drugs administration
- Radiation therapy implementation
- Immunotherapy for immunity
- Stem cell transplantation
- Transplantation of bone marrow.

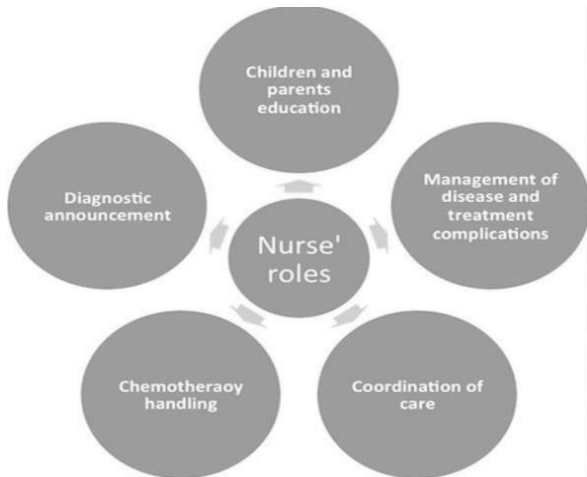


Fig. 5: Various Nursing Roles in pediatric oncology care.

**Role of Pediatric Oncology Nurses**

Oncology nurses are at the core of handling the expanding worldwide cases of malignancy. Their commitment is interesting a direct result of the scale and the variety of care jobs and duties in malignancy care.

- Health, promotion, prevention, and screening
- Referral
- Diagnosis and treatment
- Treatment and support services
- Follow-up and support services
- End-of-life care
- Survivorship

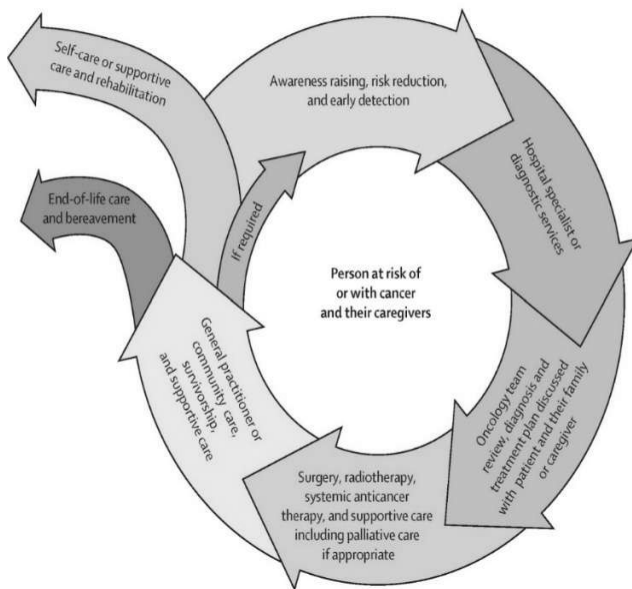


Fig. 6: standard pattern of oncology therapeutic care.

In this Series paper, to commend the International Year of the Nurse and Midwife, the feature of the commitment and effect of oncology along the malignant growth care continuum.

Conveying individuals focused incorporated consideration and ideal correspondence are fundamental parts of oncology nursing care, which are frequently made light of quality care. (Fig. 5) More oncology nurses utilizing, doing, and driving exploration will additionally show the key nursing care on consideration as a component of a group. The oncology nurses leads an impact in saving lives through counteraction and early discovery of malignancy is essential. Steady consideration, the focal mainstay of oncology nursing, empowers and engages individuals to self-oversee where conceivable. Universally, oncology nurses have an extraordinary beneficial outcome to malignancy care around the world .their pivotal commitment all through the continuum of care warrants the consideration and advancement of nursing in each country's disease procedure. 2020 is the time of the nurses: let us take this figuring out how to what's to come.<sup>6</sup> (Fig. 6)

**Conclusion**

A vital part of a efficient and successful pediatric malignant growth treatment is the delivery of care by trained professional persons. Key activities of the pediatric oncological consideration incorporate assessment of models of nursing care and techniques to upgrade the change interaction between research results and essential consideration suppliers; extension of instructive projects identified with care for the two medical attendants and kids/families; advancement of proof based practices for wellbeing advancement and prosperity; improvement of direction proposals to improve and normalize the nursing care of kids with malignancy. By and large, nursing care including screening, anticipation, advancement, research, support, training, and care coordination is keys to pushing nature of care ahead.

In a survey, it was expected to look through the new nursing care patterns, particularly the previous 5 years in the pediatric hemato-oncology field. Be that as it may, some new advancements couldn't be referenced or not came to due to the assortment in the writing. In the field of pediatric oncology, apparently numerous current subjects for care of kids and their folks have entered in the writing<sup>7</sup>. There is a requirement for more randomized controlled examinations to improve the degree of proof of new nursing draws near. The current methodologies in consideration and executing advancements will expand the personal satisfaction of the kids and their families who are followed or watched with the analysis of malignancy management.

**References**

1. Ebru Kilicarslan Toruner. New Trends and Recent Care Approaches in Pediatric Oncology Nursing. Apr-Jun; 5(2): 156-164. doi: 10.4103/apjon.apjon\_3\_18.
2. <https://www.who.int/news-room/fact-sheets/detail/cancer-in-children>.
3. Friederike Erdmann, Maria Feychting, Hanna Mogensen, Social Inequalities Along the Childhood Cancer Continuum: An Overview of Evidence and a Conceptual Framework to Identify Underlying Mechanisms and Pathways. 18 April 2019. <https://doi.org/10.3389/fpubh.2019.00084>.
4. <https://oncology.fortisbangalore.com/specialty-hospital-bangalore/pediatric-oncology>.
5. Prof Annie M Young, PhD, Prof Andreas Charalambous. Essential oncology nursing care along the cancer continuum. November 16, 2020 DOI: [https://doi.org/10.1016/S1470-2045\(20\)30612-4](https://doi.org/10.1016/S1470-2045(20)30612-4).

6. Mhamed Harif, Daniela Cristina Stefa. Nursing Care Principles in Pediatric Oncology. 2017.[https://doi.org/10.1007/978-3-319-17936-0\\_28](https://doi.org/10.1007/978-3-319-17936-0_28).

7. Asia-Pacific Journal of Oncology Nursing. APJON, ISSN 2347-5625, eISSN 2349-6673.

---