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- MacFarlane JK, Ryall RD, Heald RJ. Mesorectal excision for rectal cancer. *Lancet* 1993; **341**: 457-60.
- Kapiteijn E, Marijnen CA, Nagtegaal ID, et al. Preoperative radiotherapy combined with total mesorectal excision for resectable rectal cancer. *N Engl J Med* 2001; **345**: 638-46.
- Bosset JF, Collette L, Calais G, et al. Chemotherapy with preoperative radiotherapy in rectal cancer. *N Engl J Med* 2006; **355**: 1114-23.
- Marijnen CA, Kapiteijn E, van de Velde CJ, et al. Acute side effects and complications after short-term preoperative radiotherapy combined with total mesorectal excision in primary rectal cancer: report of a multicenter randomized trial. *J Clin Oncol* 2002; **20**: 817-25.
- Matthiessen P, Hallböök O, Rutegård J, Simert G, Sjødahl R. Defunctioning stoma reduces symptomatic anastomotic leakage after low anterior resection of the rectum for cancer: a randomized multicenter trial. *Ann Surg* 2007; **246**: 207-14.
- Clinical Outcomes of Surgical Therapy Study Group. A comparison of laparoscopically assisted and open colectomy for colon cancer. *N Engl J Med* 2004; **350**: 2050-59.
- Guilou P, Quirke P, Thorpe H, et al. Short-term endpoints of conventional versus laparoscopic-assisted surgery in patients with colorectal cancer (MRC CLASICC trial): multicentre, randomised controlled trial. *Lancet* 2005; **365**: 1718-26.
- Kang SB, Park JW, Jeong SY, et al. Open versus laparoscopic surgery for mid or low rectal cancer after neoadjuvant chemoradiotherapy (COREAN trial): short-term outcomes of an open-label randomised controlled trial. *Lancet Oncol* 2010; **11**: 637-45.
- van der Pas MH, Haglind E, Cuesta MA, et al. Laparoscopic versus open surgery for rectal cancer (COLOR II): short-term outcomes of a randomised, phase 3 trial. *Lancet Oncol* 2013; **14**: 210-18.
- Jeong S-Y, Park JW, Nam BH. Open versus laparoscopic surgery for mid-rectal or low-rectal cancer after neoadjuvant chemotherapy (COREAN trial): survival outcomes of an open-label, non-inferiority, randomised controlled trial. *Lancet Oncol* 2014; published online May 16. [http://dx.doi.org/10.1016/S1470-2045\(14\)70205-0](http://dx.doi.org/10.1016/S1470-2045(14)70205-0)

## Baseline standards for paediatric oncology nursing care in low to middle income countries: position statement of the SIOP PODC Nursing Working Group

In high-income countries, children with cancer have survival rates of almost 80%. However, most children with cancer live in low-income and middle-income countries (LMICs), and their chances of survival are often less than 20%.<sup>1</sup> The vision of the International Society of Paediatric Oncology (SIOP) is that no child should die of cancer, which it strives towards through improvement of treatment access and care globally. At the 2011 SIOP Congress, a Nursing Working Group was established within the Paediatric Oncology in Developing Countries (PODC) structure. This group represents nurses from 23 countries, and partners and advocates for nurses who seek to improve paediatric oncology care.

High-quality nursing is central to the care of children with cancer. However, nurses in LMICs are frequently poorly educated, and hospitals often do not have adequate staffing to provide quality care. This is a major impediment for treatment programmes and contributes to the low survival rates in LMICs, where most childhood cancers occur.<sup>2,3</sup> Results from large-scale studies have suggested that poor nursing education and staffing contribute to longer hospital stays, raised risks for complications, and increased mortality.<sup>4-7</sup> Nurses in LMICs face other challenges, including

restricted access to doctors at night and weekends, which requires them to make crucial patient-care decisions independently. A shortage of allied health-care professionals (eg, nutritionists, pharmacists, palliative care providers) increases the burden on nurses. Furthermore, many nurses in LMICs do not have either basic medical equipment or the authority to direct the quality of nursing care, and effective communication and partnerships between physicians and nurses are rare.<sup>8</sup> This limits the nurse's ability to educate families about treatment plans, which is critical to reducing abandonment of care, a leading cause of death in LMICs.<sup>9</sup> As such, the SIOP PODC Nursing Working Group has therefore developed six baseline global standards for nursing care.

First, staffing plans should be based on acuity of patients' conditions. A nurse to patient ratio of 1:5 for paediatric oncology units and 1:2 for critical care and transplant units is recommended. Nurses with experience of oncology should remain within the service and not rotate between specialities.

Second, a formalised paediatric oncology orientation programme for new nurses is necessary. The programme should define specific learning objectives



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and include training in both theory and clinical skills, followed by 3–4 weeks of working with a skilled nurse. New nurses should successfully complete orientation before providing unsupervised patient care. The programme should include a review of paediatric cancers, how to give chemotherapy and blood products, infection control and prevention, education for patients and families, palliative care, and early detection and management of oncology emergencies.

Third, education and training should be continued to increase paediatric oncology clinical skills and knowledge. A minimum of 10 h per year of continuing education and training is recommended.

Fourth, nurses should be acknowledged as core members of multidisciplinary paediatric oncology teams. A nurse should be included in patient rounds and all meetings with patients and parents or caregivers to discuss diagnosis and treatment plans.

Fifth, resources for safe paediatric oncology care should be available. Intravenous pumps and supplies for hand washing, sanitising, and isolation should be made available. Nurses should only prepare chemotherapy if a pharmacist is not available and when provided with personal protective equipment and a biosafety level two cabinet.

Lastly, evidence-based paediatric oncology nursing policies and procedures should be adopted to guide the delivery of quality nursing care. Because of the scarcity of nursing research in LMICs, funding for locally directed research is the next step to create relevant nursing policies and procedures.

Although these standards are basic, there are several potential barriers to their implementation in LMICs, even in programmes supported by a twinning partnership with a high-income country. These barriers include a lack of financial commitment by local governments to prioritise patient and nurse safety, recognition by hospital administrations of the value of specialised nursing care, and acknowledgment by physicians that meaningful clinical and research collaboration with

nurses have a crucial role. To achieve these standards, it is essential for local governments to commit to provision of initial and continuing education for paediatric oncology nurses. Hospital administrators need to dedicate financial resources to support adequate staffing and to obtain the minimum safety equipment for handling chemotherapy. Physicians should strive to use the expertise and knowledge base of paediatric oncology nurses by actively involving them in clinical care. Local nursing schools with physicians and twinning partners should support nursing research to identify and address local priorities. These actions will support the international implementation of core nursing standards and contribute to improved survival of children with cancer in LMICs.

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We declare no competing interests.

- 1 Jemal A, Siegel R, Xu J, Ward E. Cancer statistics, 2010. *CA Cancer J Clin* 2010; **60**: 277–300.
- 2 Wilimas JA, Ribeiro RC. Pediatric hematology-oncology outreach for developing countries. *Hematol Oncol Clin North Am* 2001; **15**: 775–87.
- 3 Day SW, Garcia J, Antillon F, et al. A sustainable model for pediatric oncology nursing education in low-income countries. *Pediatr Blood Cancer* 2012; **58**: 163–66.
- 4 Aiken LH, Clarke SP, Cheung RB, et al. Educational levels of hospital nurses and surgical patient mortality. *JAMA* 2003; **290**: 1617–23.
- 5 Elixhauser A, Steiner C, Fraser I. Volume thresholds and hospital characteristics in the United States. *Health Aff (Millwood)* 2003; **22**: 167–77.
- 6 Estabrooks CA, Midodzi WK, Cummings GG, et al. The impact of hospital nursing characteristics on 30-day mortality. *Nurs Res* 2005; **54**: 74–84.
- 7 Kane RL, Shamiyan TA, Mueller C, Duval S, Wilt TJ. The association of registered nurse staffing levels and patient outcomes: systematic review and meta analysis. *Med Care* 2007; **45**: 1195–1204.
- 8 Day SW, McKeon LM, Garcia J, et al. Use of Joint Commission International standards to evaluate and improve pediatric oncology nursing care in Guatemala. *Pediatr Blood Cancer* 2013; **60**: 810–15.
- 9 Mostert S, Arora RS, Arreola M, et al. Abandonment of treatment for childhood cancer: position statement of a SIOP PODC working group. *Lancet Oncol* 2011; **12**: 719–20.