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Use of Joint Commission International Standards to Evaluate and Improve Pediatric Oncology Nursing Care in Guatemala

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Abstract

Background—Inadequate nursing care is a major impediment to development of effective programs for treatment of childhood cancer in low-income countries. When the International Outreach Program at St. Jude Children's Research Hospital established partner sites in low-income countries, few nurses had pediatric oncology skills or experience. A comprehensive nursing program was developed to promote the provision of quality nursing care, and in this manuscript we describe the program's impact on 20 selected Joint Commission International (JCI) quality standards at the National Pediatric Oncology Unit in Guatemala. We utilized JCI standards to focus the nursing evaluation and implementation of improvements. These standards were developed to assess public hospitals in low-income countries and are recognized as the gold standard of international quality evaluation.

Methods—We compared the number of JCI standards met before and after the nursing program was implemented using direct observation of nursing care; review of medical records, policies, procedures, and job descriptions; and interviews with staff.

Results—In 2006, only 1 of the 20 standards was met fully, 2 partially, and 17 not met. In 2009, 16 were met fully, 1 partially, and 3 not met. Several factors contributed to the improvement. The pre-program quality evaluation provided objective and credible findings and an organizational framework for implementing change. The medical, administrative, and nursing staff worked together to improve nursing standards.

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Conflict of Interest

The authors declare no conflict of interest.

Conclusion—A systematic approach and involvement of all hospital disciplines led to significant improvement in nursing care that was reflected by fully meeting 16 of 20 standards.

Keywords

Pediatric Oncology; Outcomes Research; Chemotherapy

INTRODUCTION

There is great disparity between the outcomes of childhood cancer in low versus high-income countries. As a group, pediatric cancers are curable; the 5-year survival rate is 75% to 79% in the United States and Western Europe [1]. However, 80% of the world's children live in middle and low-income countries where the 5-year survival rate is often less than 20% [2]. Cancer in children in low-income countries is a matter of increasing importance to public health worldwide. The relative importance of childhood cancer in low-income countries is increasing due to the overall improvement in child health and the reduction in the incidence and mortality from communicable diseases [2, 3]. To close the survival gap between the outcomes of childhood cancer in low versus high-income countries provision of care in pediatric cancer units by specialized professionals is needed [4–5]. Nurses, who comprise the largest group of health care professionals globally, are essential to providing quality care needed to close the survival gap.

The International Outreach Program (IOP) at St. Jude Children's Research Hospital (St. Jude) was established to improve the survival of children with cancer and other catastrophic illnesses throughout the world by transferring knowledge and technology to partner sites in low-income countries. This process, often referred to as twinning, can improve childhood cancer care significantly [2, 6]. The IOP currently has established partner sites in 19 low and middle-income countries. When the IOP began to establish partner sites, a lack of nurses with pediatric oncology skills was a major impediment to the implementation of quality care [7]. To meet this need, the IOP developed a comprehensive nursing program to promote the provision of quality nursing care to partner site patients and families. A significant component of the program was the use of Joint Commission International (JCI) quality standards to evaluate, plan, and implement improvements in nursing care.

METHODS

We evaluated the International Outreach Nursing Program's impact on the quality of nursing care by appraising selected JCI quality standards at the National Pediatric Oncology Unit in Guatemala, where the nursing program was first established in January 2007, using a before and after one group design [8]. This study was part of a larger study that also evaluated the impact of the nursing program on staff and clinical outcomes. The Institutional Review Boards of St. Jude, the University of Tennessee Health Science Center, and the Medical School of Francisco Marroquín University of Guatemala approved the study.

In April 2006, the initial nursing quality assessment was performed, and in July 2009, the post-program assessment was performed. The pre-program and post-program assessments were done using 20 selected standards from JCI's six quality domains: Access to Care and

Continuity of Care; Assessment of Patients; Care of Patients; Patient and Family Education; Prevention and Control of Infections; and Staff Qualifications and Education. Only those standards with relevance to nursing were selected, and standards were evaluated from a nursing perspective. The assessments were scheduled in advance with the partner site's leaders, and 4 full days were spent assessing the site. The methods used to complete the assessments included direct observation of nursing care and a review of medical records, human resource documents, policies, procedures, and job descriptions. Interviews with nursing, medical, and administrative staff and a tour of the site were also conducted. For those standards requiring medical record review, a minimum of 5 records were used. The evaluation was completed by a quality expert and an experienced pediatric hematology/oncology nurse. The staff understood that the evaluation was not punitive and would be used as a framework to improve nursing care and a baseline to gauge the program's success.

JCI Standards

JCI standards were used because they are universally recognized as the gold standard for international evaluation and have gained international acceptance as an effective quality evaluation and management tool. JCI standards were developed by an international task force consisting of members from Latin America and the Caribbean, Asia and the Pacific Rim, the Middle East, Central and Eastern Europe, Western Europe, and Africa, and have been validated through quality and safety studies by public agencies and ministries of health outside the U.S. In addition, the standards have been evaluated by JCI Regional Advisory Councils and by persons from around the world via an Internet based field review [9]. JCI standards were developed for use within a specific population of health care organizations and included public hospitals in developing countries. The standards take into account that hospitals in many developing countries do not yet function at the level of U.S. hospital standards; therefore, they are less stringent in evaluation criteria [10]. The standards have been adapted for the international community and are designed to be culturally applicable and compliant with laws and regulations outside the U.S. [11]. A set of standards this broad in nature cannot account for a country's unique characteristics; however, there is evidence that many quality concerns are universal. Aiken, Clarke, Sloane, and the International Hospital Outcomes Research Consortium (2002) noted that countries tend to believe problems with quality of care and nurse staffing are a result of unique circumstances. Yet, data from their study suggested that contrary to popular opinion, many hospital problems know no country boundaries [12].

Intervention: International Outreach Nursing Program

In January 2007, the International Outreach Nursing Program was implemented at the National Pediatric Oncology Unit in Guatemala to improve the quality of nursing care. The need to improve standards in the domain of Staff Qualifications and Education was considered a nursing priority; therefore, the program's initial interventions were focused on these needs and included hiring a full-time nurse educator and improving the nurse to patient ratio. The educator's primary responsibilities included providing pediatric oncology education for newly hired nurses, teaching courses in chemotherapy administration and central-venous line care, and providing continuing education classes to the entire nursing staff.

The International Outreach Nursing Program provided education, resources, and professional support to prepare the educator for these responsibilities. The educator completed a 4-week comprehensive educator course at St. Jude's Latin American Center for Pediatric Oncology Nursing Education in Santiago, Chile [13]. Professional support and continuing pediatric oncology education were provided via online meetings conducted twice a month and hosted by www.Cure4Kids.org. The establishment of the Latin American Center for Pediatric Oncology Nursing Education and the development of the pediatric oncology nurse educator role in low-income countries has been previously reported [13–14].

The initial step in the process for improving the nurse to patient ratio consisted of justifying the need. The evidence that inadequate nurse staffing results in longer hospital stays, increased risk for complications, and an increase in mortality was presented to medical and administrative leaders and to the board of directors of the local non-governmental foundation (Fundación Ayúdame a Vivir) [12, 15–16]. This evidence-based approach helped gain the support needed to create new nursing positions. Negotiations with medical and administrative leaders resulted in an agreement that improved staffing would be a priority goal for 2007 and 2008, and Fundación Ayúdame a Vivir provided financial support for new nursing positions.

After the program's first year the educator was well established and efforts were underway to hire more nurses. The next phase focused on improving quality standards in the additional quality domains of Access to Care and Continuity of Care; Assessment of Patients; Care of Patients; Patient and Family Education; Prevention and Control of Infections. The nursing, medical, and administrative staff worked together as a team to improve standards. A plan to organize the improvement process included focusing on specific standards every quarter and giving individual leaders the responsibility and authority to implement change. For example, in the first quarter of 2008, a plan was developed to improve standards related to the Assessment of Patients domain. A nursing assessment form was developed by a group of nurses and instructional classes on how to use the form were provided by the educator. The educator and the nurse manager reviewed charts regularly to ensure assessments were documented and reported progress to the IOP nursing director. Also in the first quarter of 2008, to address standards in Access to Care and Continuity of Care domain, a plan was developed to include nurses in daily patient rounds and interdisciplinary meetings. The medical director provided administrative support for implementing this change and the nurse manager was responsible for facilitating nursing participation.

Because the nursing staff was not accustomed to adequately documenting nursing care, the educator provided instruction in appropriate nursing documentation, and checklists were developed to decrease the time burden of documentation and promote efficiency. To ensure that the standards in the domain of Staff Qualifications and Education were well documented, the nurse educator created an education record for each nurse that included education courses and clinical competencies completed.

RESULTS

In 2006, of the 20 standards measured, only 1 (5%) standard was met, 2 (10%) were partially met, and 17 (85%) were not met. In 2009, the same 20 standards were measured, and 16 (80%) were met, 1(5%) was partially met, and 3 (15%) were not met. The 3 unmet standards were due to a lack of patient and family education, and the partially met standard was due to a lack of nursing care plan documentation.

Improving quality standards related to nursing education and staffing required the greatest effort and resources. In the area of staffing, 25 new nursing positions were created while the number of inpatient beds and the occupancy rate remained stable, resulting in a nurse to patient ratio of 1 nurse to 5 patients compared to the previous ratio of 1 nurse to 7 patients. In the area of education, a pediatric oncology education course was developed to teach new nurses basic clinical and theoretical aspects of nursing care, and all 25 nurses hired from 2007 to 2009 successfully completed the course. A chemotherapy education course and an evaluation process to determine competence was developed. Thirty-nine of the 49 staff nurses employed by the oncology unit had documented chemotherapy competency, and the remaining 10 were scheduled for the course. Continuing education classes were organized and included relevant pediatric oncology topics. The 49 nurses completed a mean of 26 ± 8.3 hours of continuing education per year [14]. The JCI standards and a comparison of all the 2006 and 2009 findings are included in Table I. Details of the 2006 assessment have been previously published [17].

After the 2009 assessment a plan to address the remaining unmet and partially met standards was developed. The patient/family educator position was redesigned and a new nurse was hired to fill the position in November 2009. The patient/family educator completed the 4-week comprehensive educator course at St. Jude's Latin American Center for Pediatric Oncology Nursing Education in Santiago, Chile [13]. The nurse educator and the patient/family educator worked together closely to coordinate education. The patient/family educator currently provides the IOP nursing director with monthly reports documenting all educational interventions [14]. Although a plan to incorporate care plans was developed, documentation remains a challenge.

DISCUSSION

Inadequate nursing care is a major impediment to development of effective programs for treatment of childhood cancer in low-income countries. The International Outreach Nursing Program improved the quality of nursing care at the Pediatric Oncology Unit in Guatemala as evidenced by a significant increase in the number of JCI quality standards met post program implementation. The results of this study can be attributed to several factors. The quality assessment provided the baseline from which nursing needs and recommendations were determined. The assessment provided objective and credible findings and an organizational framework for implementing change. In addition, the assessment gave a focused approach to implementing change, which is critical when working in low or middle-income countries, in which healthcare needs can be overwhelming. Most important, JCI standards were valued by medical and administrative leaders in Guatemala. JCI standards

are universally recognized as the gold standard for international accreditation, and the process of accreditation has gained international acceptance as an effective quality evaluation and management tool. These facts captured the attention of the partner site leaders who possessed the authority to make changes and access to financial support for the nursing program.

An evidence-based approach to promoting the value of nursing also contributed to the program's success. Presentations on the value of nursing were provided to leaders from medicine, administration, and the foundation. The presentations included research findings that inadequate nurse staffing results in longer hospital stays, increased risk for complications, and an increase in mortality [12, 15–16]. The well recognized research provided the evidence needed to obtain the financial support to create 25 new nursing positions, which resulted in a nurse to patient ratio of 1 nurse to 5 patients compared to the previous ratio of 1 nurse to 7 patients. Finally, the full-time nurse educator was primarily responsible for improvement in the Staff Qualifications and Education domain but also worked closely with the IOP nursing director to coordinate the entire effort.

Nurses comprise the largest group of health care professionals globally and are essential to providing quality care needed to close the survival gap between the outcomes of childhood cancer in low versus high-income countries. We improved nursing education and staffing, two essential components of nursing care that are linked to decreased mortality [18–22]. This study was not designed to evaluate mortality, and nursing education and staffing are only two of many factors that affect this outcome [23]. Nevertheless, this is an important link to establish, so future work will focus on the role of nurses to decrease abandonment and toxic death through patient education, early identification of signs of infection, and rapid administration of the first dose of antibiotics in patients with febrile neutropenia.

JCI standards are currently the best option available to assess quality of care in an international health care setting; however, they are broad standards and therefore not specific for nursing or pediatric oncology. In addition, all standards are given equal value. The Association of Pediatric Hematology Oncology Nursing has developed a set of nursing standards, but the standards are not precisely defined and were not designed to be used for the purpose of assessment [24]. The JCI standards used for the partner site assessment were selected based on their relevance to nursing; the selection process was informal and involved a group of pediatric oncology nurses with experience in quality management and nursing care in low and middle-income countries. Time required to complete necessary documentation was not recorded in this study but requires evaluation to avoid the paradoxical situation in which improved documentation is associated with less time to care for patients.

The use of JCI quality standards to evaluate, plan, and implement improvements in nursing care has been utilized in 8 Latin American pediatric oncology units. To our knowledge, the model has been replicated in only one unit outside pediatric oncology. It is our desire that the model expands beyond pediatric oncology units; however, lack of funding is a major limiting factor.

How to evaluate partner sites in middle and low-income countries is a question that has not been answered. We have described the successful use of Joint Commission International standards to provide an objective and credible approach to evaluation and an organized framework for implementing change. Although we evaluated from a nursing perspective, the same standards and method could easily be used to include all disciplines. Future research should involve the development and validation of an assessment instrument specific to pediatric oncology in middle and low-income countries.

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TABLE I

Joint Commission International Standards: Comparison of 2006 and 2009 Findings

Domain	Standard	Findings
1. Access to Care and Continuity of Care	<i>The organization designs and carries out processes to provide continuity of services and coordination among health professionals.</i>	2006: Patient record available on unit. Nursing shift to shift report was completed. No regular patient rounds or interdisciplinary meetings that included nurses (Standard partially met). 2009: Patient record accessible to all providers. Nurse manager made rounds with the physicians and documented notes related to patient's care in nursing chart (Standard met).
2. Assessment of Patients	<i>Patients have their health care needs identified through an established assessment policy/process.</i>	2006: No policy regarding nursing assessments or evidence that nursing staff was conducting assessments (Standard not met). 2009: A nursing policy stated that all patients have an initial assessment and are reassessed every shift. A nursing assessment form was developed which included space for charting vital signs, review of systems, pain assessment, psychosocial evaluation, medications, procedures, intake and output, and nursing plan of care (Standard met).
	<i>Patient's initial assessment includes physical, psychological, social, and economic factors.</i>	2006: No documented initial nursing assessments (Standard not met). 2009: Charts contained an initial nursing assessment which included a review of systems, pain assessment, psychosocial evaluation, and medication history (Standard met).
	<i>Patients are reassessed at appropriate intervals to determine their response to treatment.</i>	2006: Daily nursing notes for the patients but a physical assessment was not included (Standard not met). 2009: Charts contained a thorough nursing assessment for each shift (Standard met).
	<i>Qualified individuals conduct the assessments and reassessments and have their responsibilities defined in writing.</i>	2006: No nursing job description to define assessment responsibilities and no documented training in assessment skills (Standard not met). 2009: Staff nursing job description defined assessment responsibilities. Instruction on physical assessment skills was provided by the nurse educator and documented in each nurse's education record (Standard met).
3. Care of Patients	<i>There is a process to integrate and coordinate patient care.</i>	2006: No evidence of interdepartmental rounds or conferences including the nursing staff or a written nursing care plan (Standard not met). 2009: Interdepartmental rounds occurred daily and a nurse was in attendance. Although there were complete nursing assessments and nursing notes charted, there were no written nursing care plans in the charts (Standard partially met).
	<i>Policies and procedures guide the care of high risk patients. Staff members have been trained and use the policies and procedures to guide care.</i>	2006: No policies and procedures for the care of high risk patients were available and no education was documented (Standard not met). 2009: A policy and procedure manual was available with policies related to infection control, vital signs, blood products, chemotherapy, central and peripheral lines. The manual was reviewed by the nurse manager, and each policy was signed and dated. Education related to care of high risk patients was provided by the nurse educator and documented (Standard met).
	<i>Medication use in the organization is efficiently organized to meet patient needs.</i>	2006: No policy for administering chemotherapy. Training and competencies were not required for administration. Medications were stored on carts located in the hallway. Nurses stated that the patient's armband was checked prior to medication administration; however, not all patients had armbands. No policy for reporting medication errors. The medications from pharmacy were labeled properly (Standard not met). 2009: There were specific policies for administering chemotherapy drugs and a chemotherapy education course for nurses with an evaluation process to determine competence. Thirty-nine of the 49 staff nurses had documented competency and the remaining 10 were scheduled for training. Medications were stored properly and labeled. Patients wore armbands and the nurses used the armband as a method of patient identification. There was a process for reporting medication errors (Standard met).
	<i>The organization addresses end of life care.</i>	2006: A palliative care program was in place and the nursing staff was involved in the program. The nursing staff expressed awareness of the unique needs of these patients (Standard met). 2009: The nursing staff was actively involved in the palliative care program. Palliative care education for nurses was documented (Standard met).
	<i>Pain is assessed in all patients.</i>	2006: The nursing staff stated that patients were assessed for pain on an ongoing basis; however, there was no documentation (Standard not met). 2009: In the nursing assessment form there was a section for pain assessment using a pain scale. Charts contained documented pain level of the patient for each shift (Standard met).

Domain	Standard	Findings
4. Patient and Family Education	<i>Patients are supported in managing pain effectively.</i>	2006: Pain medication administration was not consistently documented (Standard not met). 2009: Pain medication administration was documented on charts reviewed (Standard met).
	<i>Patients are educated about pain management.</i>	2006: No documentation to support education of patients and families about pain management (Standard not met). 2009: No change (Standard not met).
	<i>Each patient's educational needs are assessed and recorded.</i>	2006: The patient/family educator stated that a needs' assessment was done for newly diagnosed patients and home visits for educational purposes were provided. However, no documentation of assessment of education needs or home visits was recorded on charts reviewed (Standard not met). 2009: No documentation of patient and family education on charts reviewed. The nurse manager stated that the patient educator had been asked to document her work and had been given a written reprimand (Standard not met).
	<i>Patient and family education includes topics appropriate to the patient's condition.</i>	2006: No documentation of education in the charts reviewed (Standard not met). 2009: No change (Standard not met).
5. Prevention and Control of Infections	<i>The organization implements a program to reduce the risk of nosocomial infections in patients and health care workers.</i>	2006: There was a nurse designated as the infection control nurse whose responsibilities were to monitor surveillance activities and report findings monthly to the medical director. These reports were not available for review. The nurses reported that they had difficulty obtaining antibacterial soap, and alcohol gel was rarely used. No documented education related to prevention and control of infections (Standard not met). 2009: There were 3 full-time infection control employees, 2 nurses and a physician. All had completed a 4 week infection control course directed by the IOP Infection Control Program. All rooms were clean and hand sanitizer was available. Documentation of infection control teaching done by the nurse educator was available (Standard met).
6. Staff Qualifications and Education	<i>Each staff member's responsibilities are defined in a current job description.</i>	2006: Nursing job descriptions defining responsibilities were under revision by the human resources department, the hospital administrator and the nursing director (Standard partially met). 2009: There were recently revised job descriptions that clearly defined nursing responsibilities. The nurse manager had access to all nursing job descriptions (Standard met).
	<i>The organization uses a defined process to ensure that staff knowledge and skills are consistent with patient needs.</i>	2006: No process to evaluate staff knowledge or clinical competencies (Standard not met). 2009: Chemotherapy and central-venous line care classes were provided and competency for these skills was evaluated and documented in each nurse's education record. A comprehensive education course for newly hired nurses and a continuing education program were implemented in 2007 (Standard met).
	<i>A staffing plan for the organization identifies number, type and qualifications of staff.</i>	2006: Staffing plan not available. No evidence that assignments were based on scope and frequency of care required and skill level of nurse. According to staff interviews and direct observation for the day shift in general care unit, the nurse to patient ratio was 1 nurse to 7 patients (Standard not met). 2009: Detailed staffing plan based on patients' needs was available for review. The nurse to patient ratio was 1 nurse to 5 patients for the day shift in the general unit. From 2008 to 2009, 25 new nursing staff positions were created (Standard met).
	<i>All new staff members are oriented to the organization and to their specific job responsibilities.</i>	2006: No organized education for newly hired nurses. Nurses were provided 15 days of unpaid orientation and during this time they worked with a preceptor to understand roles and responsibilities. Theory and clinical skills were not taught or evaluated (Standard not met). 2009: In 2007, a pediatric oncology education course was developed to teach new nurses basic clinical and theoretical aspects of nursing care. All 25 nurses hired from 2007 to 2009 completed the course and all education, including evaluation scores, was documented in each nurse's education record. A policy was instituted in 2007 to pay nurses for their time spent in orientation (Standard met).
	<i>Each staff member receives ongoing in-service and other education and training to maintain or advance his or her skills or knowledge.</i>	2006: No documented continuing education for nurses (Standard not met). 2009: Continuing education classes were organized by the nurse educator and included relevant pediatric oncology topics. Classes were well documented and included topic presented, presenter, time and date, persons in attendance, and evaluation score of each nurse. The 49 nurses employed by the oncology unit from 2007 to 2009 completed a mean of 26 ± 8.3 hours of continuing education per year (Standard met).