objectives of this study were to determine (1) in which period of treatment changes in nutritional status and body composition occurred, and (2) which factors contributed to these changes.

Materials and methods
We performed a prospective cohort study of 133 newly diagnosed cancer patients with hematological, solid, and brain malignancies. Anthropometric data and related factors were assessed at 0, 3, 6 and 12 months after diagnosis.

Results
Despite initial weight loss in the first weeks after diagnosis in patients with hematological and solid malignancies, body mass index (BMI) and fat mass (FM) increased within 3 months with 0.13 standard deviation scores (SDS) (P<0.001) and 0.05 SDS (P=0.021) respectively. Increase continued during the next 9 months, and resulted in doubling of the number obese patients. Fat free mass (FFM), already low at diagnosis, remained low. During the whole study period about 17% of the patients were malnourished according to low FFM. Tube feeding and diminished activity level were related to increase in respectively BMI and %FM SDS. No relationship was found between energy intake or corticosteroids and increase in BMI or %FM.

Conclusions
Alarming increase of BMI and FM SDS already started within the period of intensive treatment and continued thereafter, while FFM SDS remained low. Improvement of nutritional status and body composition might be accomplished by prevention of overfeeding and improvement of physical activity in children on treatment.

Purpose/objective
To clarify nursing care issues required for children with DS and Leukemia

Materials and methods
Ten children with DS who were consecutively diagnosed with leukemia (7 acute myeloid leukemia and 3 acute lymphoblastic leukemia) at St. Luke’s International Hospital between January 2005 and November 2012 were evaluated in this retrospective analysis. 

Results
Median age at diagnosis was 2.5 years (range, 1.0 - 7.2). Median developmental quotient (DQ) at admission was 39 (range, 26 - 63) and had no significant difference compared at the end of hospitalization (median duration was 10 months). Eight patients had DS-associated complications including congenital heart disease, hypothyroidism and laryngomalacia, but none of them interfered starting chemotherapy. All patients suffered from treatment-related complication such as infection and mucositis, but no treatment-related mortality was observed. Nursing care issues, specifically required for patients with DS and leukemia, are divided into 4
categories: safety management (self-removal of central venous catheter (CVC) and falling), infection control (skin care, oral care and management of respiratory infection), difficulties in daily nursing care (oral medication and toilet support) and psychosocial problems (anxiety and stress among family). The risk of self-removal of CVC was significantly correlated with only lower age. However there was no correlation between other problems and variables (DQ, type of leukemia and presence of autism). All issues were addressed collaboratively with multi-disciplinary team including child life specialist, nursery teacher, and medical social worker.

Conclusions
Since children with DS and leukemia have developmental disabilities and increased susceptibility to infection, special considerations in nursing care are needed. Taking into account physical and cognitive abilities of each patient, nursing care should be individualized. Multi-disciplinary approach is important to promote development of these patients and to support their families. Lastly, in order to implement optimal nursing care, sufficient staffing and child-friendly environment should be maintained.

PATIENT-REPORTED OUTCOMES COLLECTED VIA SMARTPHONE: ADOLESCENT CANCER PATIENTS’ NAUSEA TRAJECTORIES
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Purpose/objective
Nausea is commonly associated with cancer treatment. However, the trajectories of patients’ daily experiences with nausea have not been well characterized, particularly during adolescence. Therefore, the purpose of this investigation was to describe adolescents’ daily reports of nausea over a 3-week period.

Materials and methods
In this study, 58 cancer patients aged 13–21 years (on therapy, n = 22; off-therapy, n = 36) completed an electronic symptom diary on a smartphone platform daily for 21 days. Nausea was measured on the Pediatric Nausea Assessment Tool (PeNAT, potential range: 1–4) and a visual analog scale (potential range: 0–100). Higher scores on both instruments indicate more severe nausea.

Results
Adherence to daily symptom reporting exceeded 80%. The correlation of scores on the PeNAT and the nausea visual analog scale were strong and positive (p < 0.05, r = 0.67). Nausea severity did not vary by gender or ethnicity and did not correlate significantly with age. As expected, nausea severity was significantly higher among patients who were on-therapy (mean PeNAT = 1.55) than those who had completed treatment (mean PeNAT = 1.24, p < 0.011). Although among patients receiving chemotherapy nausea severity scores were fairly low when averaged among a typical 21-day treatment course, considerable inter-patient and intra-patient variability was noted. While some patients reported no nausea, others reported high levels of nausea throughout the chemotherapy cycle. In addition, the relationship of nausea to other symptoms (i.e., pain, sleep quality, fatigue), mood, and to quality of life will be presented.

Conclusions
Despite the common use of multi-agent anti-emetic therapy, some patients remain burdened by nausea. Additional research of the etiology and treatment of chemotherapy-induced nausea is needed.

PHYSICAL CONDITION AND ITS RELATIONSHIP TO UNCERTAINTY OF SURVIVORS OF CHILDHOOD AND ADOLESCENCE WITH LOWER EXTREMITY BONE TUMOR IN JAPAN
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Purpose/objective
This study aimed to determine the current physical condition, including physical function, limb pain, and self-care for the limb, of survivors of childhood and adolescence with lower extremity bone tumor, and identify factors related to uncertainty.

Materials and methods
Self-administered questionnaires were distributed at two cancer hospitals in Japan. Forty-two participants who had been diagnosed with osteosarcoma (n = 35) or Ewing’s sarcoma (n = 3) before the age of 19 were recruited. Physical function was measured using the Toronto Extremity Salvage Score translated in Japanese. Correlation analysis and multiple regression analysis were performed to examine the relationships between uncertainty and physical condition.

Results
The most common surgical procedure was total knee replacement (n = 23). The prevalence of limb pain was 42% and 3 participants had phantom limb pain. Seventy-five percent of participants responded that they could perform self-care for the limb and specific examples given in free descriptions included skin care for the amputation surface, requesting repairs for equipment failures, and control of limb pain. The results of a correlation analysis revealed that physical function (r = 0.47, p < 0.01), limb pain (r = 0.56, p < 0.01) and self-care for the limb (r = 0.58, p < 0.01) were factors related to uncertainty. Multiple regression analysis (adjusted R² = 0.41) indicated that uncertainty is affected by physical function (β = 0.36) and self-care for the limb (β = 0.46).

Conclusions
Previous studies assumed that the psychological state of survivors of childhood and adolescence with lower extremity bone tumor is not affected by their physical function. However, this study clarified the correlation between survivors’ uncertainty and their physical condition. Maintaining good self-care for the limb improves survivors’ ability to cope with uncertainty. Moreover, those who underwent total knee replacement were likely to experience limb pain. Therefore, it is important for medical staff to assess the degree of limb pain and support pain control.

PARENTS’ PERCEPTIONS OF THEIR CHILD’S SYMPTOM BURDEN DURING AND AFTER CANCER TREATMENT
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Purpose/objective
The aim is to describe parents’ perceptions of their child’s symptom burden during and after cancer treatment and to investigate whether parents’ perceptions vary with child characteristics and parent gender.