(HMEP) is a pediatric hospital caring for patients with chronic kidney disease in Honduras, PD has been offered as a method for RRT since September 2014.

***Methods.*** In HMEP, monitoring of PD infection rates through active surveillance began December 1, 2017, as the first step (define and measure) toward the improvement of the PD Program based on Six Sigma methodology. A case of peritonitis was diagnosed when at least 2 of the following 3 criteria were met: (1) Clinical signs or symptoms of peritonitis (cloudy effluent or abdominal pain with fever or vomiting); (2) Altered peritoneal fluid cell count (after a dwell time of 2 hours: a WBC above 100 cells/mm$^3$ in an uncentrifuged sample, with at least 50% neutrophils; or any WBC count with at least 50% neutrophils if the dwell time was less than 2 hours); (3) Positive peritoneal fluid culture. Patient data, risk factors for infection, causative organisms, and event outcomes were recorded. We present the main results of the analysis phase of all peritonitis cases using descriptive statistics.

***Results.*** From December 1, 2017, through November 30, 2019, 79 patients required PD, representing 8931 catheter-days; and 30 peritonitis episodes occurred among 28 individuals (35%). The peritonitis rate during the 2-year surveillance period was 1.2 infections per patient-years (ideally: <0.67). Twenty-seven (90%) of cases were classified as healthcare associated since these patients underwent PD 3 times a week in the hospital and the catheter was only manipulated by medical staff; the other patients received dialysis at home. The median time from catheter placement to the event was 27 days (5–383 days). All patients had clinical signs or symptoms of peritonitis. Peritoneal fluid cell count results were available for 29 infections, all of which reported altered results. Peritoneal fluid cultures were positive in only 12 events (40%); 6 (50%) reported Gram-negative organisms, 5 (41%) reported Gram-positive and 1 reported *Aspergillus* spp. Nonfermentative Gram-negative bacteria (*Pseudomonas aeruginosa* and *Acinetobacter lwoffii*) were the most common organisms identified; *Staphylococcus epidermidis* was the most common Gram-positive. Ten events (33%) required removal and replacement of the catheter due to the infection, 6 (20%) required permanent transfer to hemodialysis; 2 (7.1%) patients experienced a relapse. Two (7.1%) died due to infection.

***Conclusions.*** Implementing Six Sigma methodology allowed us to improve our PD Program by objectively quantifying the magnitude of the problem and identifying risk factors. This supported the infection prevention and control team with the implementation and improvement of preventive measures: change in hand hygiene products (from triclosan to chlorhexidine), increasing hand hygiene compliance, improving connection/disconnection procedure, PD catheter insertion, and maintenance, empowerment of caregivers.

### #60: Knowledge of Diagnosis and Management of Chagas-related Heart Disease Among Pediatric Cardiologists in the United States

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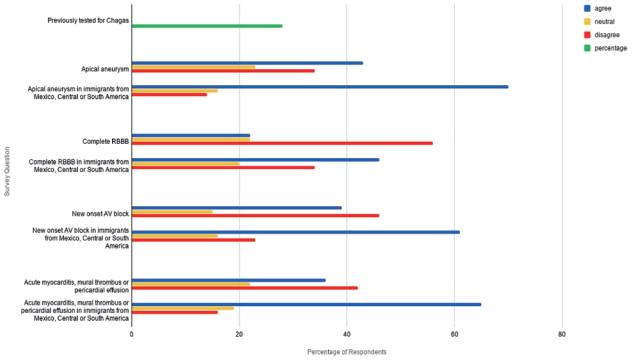
***Background.*** Chagas disease is a highly pathogenic infection with a prevalence of approximately 5.7 million cases worldwide and greater than 300,000 cases in the United States. Up to 40% of immigrants to the United States are from highly endemic Latin American countries. An estimated 40,000 women of childbearing age in the United States are infected, with a 1–5% risk of vertical transmission. The impact of this disease is extensive, often life-long, and difficult to eradicate. The purpose of our study was to better understand current knowledge and experience among pediatric cardiologists in the United States with the cardiac presentations of Chagas disease to determine where to focus educational programs and critical content.

***Methods.*** We prospectively disseminated a 19-question survey to pediatric cardiologists via the PediHeart, WSOPC, and Pediatric CHF listservs three times between September and November 2019. The survey included demographic, multiple-choice and Likert-scale questions. We used Qualtrics to ensure anonymity. Respondents outside of the United States were excluded.

***Results.*** Of 140 responses received, 120 cardiologists treated pediatric patients in the United States. Over half (62.5%) of respondents served a >10% Latin American patient population. Most providers (87%) had not seen a case of Chagas disease in their practice; however, most (72%) also had never tested for Chagas. In response to the statement: "I feel comfortable recognizing cardiac presentations of Chagas disease in children", (85%) of respondents disagreed. Most respondents selected that they would not include Chagas on their differential diagnosis for cardiac presentations that included conduction anomalies, myocarditis, and/or apical aneurysms (Figure 1). However, when considering patients who recently immigrated from Latin American nations, inclusion of Chagas in the differential diagnosis increased. In response to the statement: "If I was offered a lecture on Chagas-related heart disease, I would be likely to attend," 87% of respondents agreed.

***Conclusions.*** In our sample of pediatric cardiologists, very few had seen cases of Chagas disease, albeit very few tested for it or included it in their differential diagnosis. However, most individuals agreed that education on Chagas disease would be worthwhile. Education could help ensure these cases are not missed in pediatrics. Future analysis should focus on changes in provider knowledge and/or testing as the incidence grows, or as educational programs are implemented.




### #66: An Educational Needs Assessment of Oral Health Knowledge, Attitude and Practices Among Graduates of St. Jude Global Infectious Diseases Training Programs

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***Background.*** Chemotherapy and radiotherapy for oncologic diseases can cause oral complications during therapy or thereafter. These oral complications and their consequences may interfere with cancer treatment, prolong hospital stay, and increase overall treatment costs. Therefore, oral examination of children with cancer by healthcare providers must be part of routine clinical examination. According to published literature, oral examination and recommendations of best oral care in children with cancer might not be routinely practiced and varies among providers. We suspect that personal knowledge, attitude and practice may play an important role in the routine practice of healthcare professionals and that the introduction of an oral health curriculum may complement existing practice. To tailor oral health training, we must know the healthcare professional's educational needs and their attitude toward oral health.

***Methods.*** Steps followed to build the needs assessment of our targeted learners included: (1) literature review of published surveys; (2) reviews of oral healthcare policies; (3) key-informant interviews with practicing healthcare providers regarding oral health training; (4) selection of essential survey items; (5) face validity; and (6) pilot testing. We used the ©2019Qualtrics® software to build this survey. Face validity was evaluated and approved by five subject matter and survey experts. Graduates of the St. Jude Global Infectious Disease training served as pilot testing subjects.

***Results.*** Interviews indicated that information about oral health examination is often contained in institutional policies; training in oral health is cursory. Surveys published in the literature have assessed knowledge related to oral complications such as oral mucositis and dental caries. We have added gingival conditions to our survey, which is also one of the most prevalent oral manifestation in pediatric cancer patients. Our 31-item survey is comprised of multiple choice and Likert scale questions distributed in seven sections, namely: (1) demographics; (2) clinical settings; (3) participant's view of own oral healthcare; (4) knowledge and practice on oral infections; (5) knowledge, attitude and practice of oral examination; (6)attitude and practice of oral healthcare preventive measures, and; (7) continuing education. Validity testing indicated two questions that required modifications—the definition of plaque, its causes, and oral infections and manifestations. The final survey tool will take participants approximately 15 minutes to complete.

***Conclusion.*** We developed a 31-item survey tool that will be used for assessing the needs of global healthcare providers, from which we can develop targeted and appropriate educational programs.

### #68: Outcomes of Establishing Infection Care and Prevention Standards in Pediatric Oncology Units in Three Hospitals on the Island of Hispaniola

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***Background.*** Survival of children with cancer goes hand-on-hand with cancer treatment and improvement of infection care and prevention (ICP). The Hispaniola Island project aims to improve the quality of care and survival for children with cancer in 3 pediatric cancer units by implementing ICP programs in these units with the long-term plan of absorbing such programs into the structure of the hospital care delivery process. We report the 1-year outcomes of establishing ICP standards in pediatric oncology units.

***Methods.*** We followed the general steps for health promotion when engaging with the new sites, which are: (1) planning the process; (2) conducting a situational

assessment; (3) identifying objectives; (4) identifying strategies; (5) developing indicators; and (6) tracking progress.

***Results.*** The planning process included discussions with local leadership, timeline plans for ICP interventions, data gathering, and decision-making. Three healthcare providers were identified and trained through the St. Jude Global educational programs as local ICP champions and institutional contacts. Through site visits and focus group discussions, each unit developed a team consisting of the local ICP champion and an infection preventionist to lead the local unit ICP improvement. Situational analysis revealed no surveillance in infections, suboptimal practices hand hygiene, central-line management, and mechanical ventilation. To guide improvement, the local ICP team begun collecting surveillance of ICP indicators, such as infection rates, with monthly reporting to and mentoring by the St. Jude team. Since February 2019, the 3 sites ICP teams prospectively captured 17,532 patient-days (median: 365 patient-days per month; range: 209–573), 384 central-line days (median: 15 central-line days per month; range: 0–33), identified 278 healthcare-associated infections in 159 patients; monitored hand hygiene through direct (observations) and indirect (alcohol gel consumption) methodologies and provided monthly education sessions in ICP to hospital staff, patients and their families. Early results demonstrate the utility of a dedicated ICP team using a standardized ICP reporting system to guide focused improvement of care delivery.

***Conclusions.*** Improving ICP standards is essential for any intervention which aims to improve the survival of children with cancer. A step-wise procedure in building local teams, engaging hospital leaders, evaluating on-site resources, and introducing methods to collect infection rates and other quality indicators for healthcare delivery will provide evidence-based guidance to improve the safety of cancer care delivery. We hope that the improvement could be sustained in the longer run by incorporating the created structure and processes to the hospital system.

**#69: Improving Communication About the Care and Prevention of Infections in a Pediatric Oncology Unit by Using Patient Daily Goals in Multidisciplinary Rounds**

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***Background.*** In children with cancer infections are the most frequent complication, with fatal outcomes if not addressed promptly. Therefore, care and prevention of infections in these patients require multidisciplinary interventions, with effective communication among healthcare providers to reduce the morbidity, length of stay, and the inappropriate use of resources. We used the Institute of Healthcare Improvement (IHI) model for improving the communication among healthcare providers by using patient daily goals after the oncology pediatric unit multidisciplinary rounds.

***Methods.*** A multidisciplinary team was identified in the pediatric oncology unit. The team received weekly coaching on the IHI methodology. The methodology used included the creation of a block diagram to understand the baseline processes and a key driver diagram. Then, after a literature review, a data collection plan and measures were identified. The team identified different ideas for changes and prioritized them using an impact-effort matrix. Finally, several rounds of Plan-Do-Study-Act (PDSA) cycles reached the desired changes that organized the patient daily goals for sharing in the form of a worksheet. This worksheet was shared with nurses and pharmacist staff, a chat group was created, and the routine use of the daily goals for patient management was taught and incorporated into the rest of the care team staff. The percentage of excellent communication among all multidisciplinary teams and outcomes (length of stay, intensive care unit admission, and mortality) were recorded at baseline and endline. We determined the statistical significance of the baseline vs. endline difference by using $\chi^2$ and *t*-tests.

***Results.*** A total of 105 patients with suspected infections were included over a 6-month period (June through November 2019). We found a significant increase per month in the percent of agreement in excellent communication in the patient daily goals between infectious diseases specialist faculty and fellows, nurses, pharmacist, and pediatric oncology faculty and fellows (33.3% vs. 91.3%) (P = 0.004). Length of stay decreased monthly after our interventions (baseline: mean 14.7 days [SD 12.4] vs. after intervention: mean 6.7 days [SD 2.7]) (P = 0.014). There were only one ICU admission and no deaths during the implementation period.

***Conclusions.*** Our approach using patient daily goals improved communication among a multidisciplinary team, leading to decreased length of stay and supporting adequate outcomes.

**#72: Implementing an Algorithm-based Approach for Treatment of Fever and Neutropenia in Pediatric Oncology Patients in Tegucigalpa, Honduras**

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***Background.*** Fever and neutropenia (FN) is a frequent complication in pediatric oncology patients, especially in high-risk patients. In our institution, 43% of acute lymphoblastic leukemia (ALL) patients in induction have at least one hospitalization for FN. A lack of institutional guidelines has led to misuse of antibiotics, prolonged antibiotic wait time and hospitalizations, and unnecessary venipunctures, among others. Implementing an algorithm has provided us with a baseline of previous FN management, and has led to an improvement in management as a whole and to critical areas such as lowering antibiotic wait time in these patients.

***Methods.*** Throughout 2017 we created and revised an algorithm for the management of FN based on current international FN guidelines and, tailored to our specific setting and needs. Orientation began 2 months prior to implementation, with intense training of residents, attendings, and nursing staff one month prior, and for the first 2 months of implementation. Active surveillance of adherence and outcomes, plus periodic retraining has been done throughout implementation. Adherence measurements include antibiotic wait time, use of antibiotics according to risk stratification, number of algorithm deviations, and collection of blood cultures.

***Results.*** Seventy-four patients met inclusion criteria from May 2018 to April 2019. Results were compared between early implementation, (first 3 months: group 1), to the remaining 9 months of the first year (group 2). Time to initial evaluation decreased by 75%, from 76.8 minutes in group 1 to 20.6 minutes in group 2 (P < 0.05). Antibiotic wait time decreased by 54.9%, from 5.18 hours to 2.3 hours (P = 0.0074). Time to blood culture was reduced by 65.3%, from 248 minutes to 85 minutes (P = 0.0040). Incorrect use of antibiotics according to risk stratification decreased by 59.2%, from 42% in group 1 to 17% in group 2 (P = 0.10). Total number of deviations decreased from 1.39 per patient to 1.17 per patient (P = 0.22; Table 1).

***Conclusions.*** Through initial and periodical training and active surveillance, key targets for adherence showed significant improvement throughout the first year of implementation. Maintaining communication with providers through monthly reports of audits, discussions of cases, and retraining improved awareness and willingness to adhere to protocol. Implementation has been particularly useful to residents and attendings outside of the Oncology Ward, where 49% of FN patients in our hospital are treated. It has provided standardized management, improved detection of cases, and reduced delays in care.

**Table 1: Comparison of adherence measures**

| | Time to evaluation (mean) | Antibiotic wait time (mean) | Time to blood culture (mean) | Incorrect use of antibiotics (%) |
|---|---|---|---|---|
| Group 1 | 78.6 min | 5.18 | 248 | 42 |
| Group 2 | 20.6 | 2.3 | 85 | 17 |
| P value | <0.05 | 0.0074 | 0.0040 | 0.10 |

**#20: Bloodstream Infections in Pediatric Hematology/Oncology Patients: 3 Years' Experience of a Specialty Pediatrics Hospital in Tuxtla Gutierrez Chiapas. Mexico**

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***Background.*** Bloodstream infections are the major cause of morbidity, increased cost, prolonged hospitalization, and mortality in pediatric patients. During treatment, cancer patients require a central vascular access; however, central venous catheters are an important source of bloodstream infections. Rigorous infection control measures and continuous surveillance are required to curb the frequency of these infections.

***Objective.*** We aimed to identify the causative microorganisms in patients with central line–associated bloodstream infection (CLABSI) in hematology-oncology pediatric patients.

***Material and Methods.*** All pediatric hematology-oncology patients with CLABSI of Specialty Pediatrics Hospital between January 2016 and September 2019 were reviewed. We defined CLABSI according to the Centers of Disease Control and Prevention definition. Demographic data and microbiologic isolation were analyzed.

***Results.*** Seventy-five cases of CLABSI in 432 patients (mean age 9.5 years) were reported. The incidence of CLABSI was 0.9/1000 catheter-days (80,232 total catheter-days). Patients with acute lymphoblastic leukemia had the highest infection density 2.5 /1000 patients-day. Coagulase-negative staphylococci was isolated in 38.5% (30/75) of significant blood culture (CoNS 38.5%); *P. aeruginosa* in 18.6% (14/75); *K. pneumoniae* in 10.6% (3/75); *E. coli* in 6.6% (5/75); and *Candida tropicalis* in 5.3%(4/75) of cases. Enterobacteriaceae were broad-spectrum betalactamase producers; *P. aeruginosa* was susceptible to antibiotics betalactamics with antipseudomonal action and *Candida* spp. was susceptible to azoles. We did not use lock antibiotic therapy and all the catheters were removed once CLABSI was diagnosed. Empiric antibiotic treatment in CLABSI in Specialty Pediatrics Hospital based on these findings includes ceftazidime plus vancomycin.

***Conclusions.*** CoNS and *P. aeruginosa* are the predominant pathogens in CLABSI among pediatric hematology-oncology patient. Antibiotic susceptibility profile has no change during the period of time analyzed, so empiric therapy remains appropriate.

**#25: Survival and Risk Factors Associated with Mortality due to Invasive Aspergillosis in Pediatric Oncology Patients in Mexico City**

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