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Medical Student		
MS CV	**Leida Voulgaropoulos** Lora Wichser	***Treatment of a Hmong American Adolescent with Severe Major Depressive Disorder*** The treatment strategy for moderate to severe Major Depressive Disorder (MDD) in adolescents is a combination of a selective serotonin reuptake inhibitors (SSRI) and Cognitive Behavioral Therapy (CBT) (1,2). In cases in which SSRIs are contraindicated or not acceptable to the patient, CBT and interpersonal therapy can be used as monotherapy with variable responses (3). We present a case of a Hmong American adolescent with severe MDD and suicidal ideation, complicated by parental cultural barriers to use of antidepressant medication who showed signs of improvement with psychotherapy. Description of Work: A 15-year-old Hmong American female with a history of MDD and feelings of hopelessness, worthlessness, self-loathing, anhedonia, and anergia (an abnormal lack of energy) presented to the emergency room with suicidal ideation with plan to overdose on over-the-counter medications. The patient had been seeing a therapist, and her mother had declined the use of antidepressant medication due to concerns commonly expressed in the Hmong Population. The patient was recommended inpatient treatment, but the patient and her mother declined this option. They were agreeable instead to an alternate treatment plan as an outpatient in an intensive day treatment program. This program included psychiatric consultation, group therapy, music therapy, art therapy, skills training, and weekly family meetings. In addition, there were weekly family discussions of the treatment approach with her mother who did not approve the use of antidepressant medication despite her daughter's willingness to try this approach. Pertinent laboratory studies including endocrine workup revealed vitamin D deficiency and an absence of thyroid disease. She started vitamin D supplementation, after discussion with and approval by the patient's mother. Course of therapy/results: A) Baseline: symptoms of anergia, hopelessness, helplessness, and sleep irregularity, with evidence of psychomotor slowing and blunted affect. B) After 1st month: sleep schedule improved and affect appeared brighter. C) After second month: increase in social interactions, but remains reserved. D) After third month: improvements in her mood at home, more talkative in groups. Reflections: This case illustrates the challenges in treating mental illness in adolescents of Hmong ethnic origin. Several studies have demonstrated that cultural practices and beliefs, mental health literacy, language barriers, stigma, accessibility and affordability and trust are all obstacles that discourage the Hmong from seeking mental health services early in the course of disease (4,5). It is important as physicians to develop an awareness of the cultural beliefs of the Hmong population and develop methods of cross-cultural communication that will facilitate treatment for mental illness. When the first line strategy to treat severe adolescent MDD is not acceptable, psychotherapy can be an effective intervention, avoiding life-threatening complications from suicidal ideation.

MS CV	**Anna Krieger**	***Patau syndrome with prolonged survival*** Trisomy 13 (Patau syndrome) is generally considered to be a fatal anomaly. A recent multi-state, population-based study of trisomy 13 demonstrated a median survival time of 5 days. Cumulative probability of survival drops precipitously throughout infancy, with few surviving beyond the first month and year. Despite this high mortality, limited case studies report a number of children with trisomy 13 surviving into late childhood and early adulthood. While life expectancy and clinical outcomes of trisomy 13 have been well documented, there has been inconsistency and paucity of literature delineating factors influencing survival. We report a 9-year-old female with non-mosaic Patau syndrome (47, XX, +13) who has required minimal procedures and hospitalizations throughout her lifetime. We describe her prenatal course and postnatal findings, including phenotypic features, neuroimaging, and echocardiography. We also outline her growth and development throughout infancy and childhood. Our report hopes to add to the limited, but growing, documented cases of trisomy 13 with prolonged survival. Identifying the spectrum of prenatal factors, imaging findings, and clinical anomalies in long-term survivors of trisomy 13 may aid in the understanding of contributory factors to longevity and better predict patient outcomes.
MS R/QI	**Ryan Cullen** Rahul Kaila	***Elevated Potassium in Hemolyzed Sample in Pediatric Patients: Repeat or Don't Repeat*** Obtaining serum samples for electrolytes is common in busy emergency departments. Despite best efforts, hemolyzed samples causing hyperkalemia, termed "pseudohyperkalemia" occurs in approximately 3% of blood draws. Redrawing samples increases length of stay, places the child for a secondary painful procedure, and is likely a cause for patients and families to become dissatisfied. Objective Determine if pseudohyperkalemia occurring among healthy children should be repeated. Methods We performed a 5-year retrospective chart review of all patients with hyperkalemia secondary to hemolysis. The laboratory defines hyperkalemia as a sample with a potassium of > 5.3 mmol/L and reports 3 categories of hemolysis: mild, moderate, and severe Results A total of 236 children were captured with any degree of hemolysis. Age ranged from 3 days to 17 years and 11 months. Mean age was 3.7 years of age with an initial mean initial hemolyzed potassium level of 6.5. Out of the 236 patients with pseudohyperkalemia, 170 (72%) had repeat potassium done in the ED and 66 (28%) did not have a repeat potassium done. Overall, among the 170 patients with repeat potassium done in the ED for hemolyzed hyperkalemia, 164 (96.47%) had normal potassium and 6/170 (3.5%) patients had true hyperkalemia and among these 5/6(83.3%) had abnormal BUN and creatinine as well. Prevalence of subsequent true hyperkalemia was 6/170 (3.5%). Among the 236 patients, One hundred and fifty subjects were healthy (150/236, 63.6%) and 92 (92/150, 61.3%) had a repeat potassium. Two children (2/92, 2.1%) had true hyperkalemia and both had abnormal BUN and creatinine. Eighty-six subjects had either kidney, heart or other conditions (86/236, 36.4%) and (78/86, 90.7%) had repeat potassium. Four children (4/78, 5.1%) had true hyperkalemia. The true hyperkalemia patients were: 2 with kidney issues had Focal segmental Glomerulonephritis and other had Chronic renal failure with abnormal BUN (67,33) and creatinine(1.11, 2.92), none with heart issues, 1 child in DKA also had abnormal BUN of 46 and creatinine of 1.89, and 1 child with carnitine deficiency who had normal BUN/creatinine. All but 1 child with carnitine deficiency had abnormalities of the BUN and Cr. Conclusion In our small sample, it appeared that children without underlying conditions and children with medical conditions who have hyperkalemia from hemolysis do not require a repeat sample unless there is associated abnormal BUN and Cr. More than 60% healthy patients and 90% with underline medical condition had hemolyzed sample repeated which can be avoided. Performing less sampling on pseudohyperkalemia would decrease length of stay and increase family satisfaction.

MS R/QI	**Nick Pricco** Andrea Tinsay, Vishal Naik, Jing Jin, Manu Madhok MD	***Medication use in lumbar punctures at a tertiary care children's hospital*** Medications are frequently used during pediatric lumbar punctures (LP). However, there is significant variation in the use of these medications. Objective: To assess whether different medications affect pediatric lumbar puncture outcome. Methods: An IRB approved retrospective review was conducted on the records of patients that had LPs from January 2012-December 2016. Data abstracted included age, race, weight, procedure location, medications, medication route, trainee performance, and outcome. Outcomes were defined as unsuccessful if the record had a subjective description of an unsuccessful attempt, a CSF RBC count of >400 cells/μL, or the need of a second LP within 24 hours. Patients with LPs performed in hematology/oncology clinic, as a therapeutic procedure, and records with missing information were excluded. Data was analyzed via chi-square analysis and logistic regression. Data of unsuccessful attempts were abstracted for change of provider, LP position, use of sedation, change in medication, side effects, and number of attempts. Survey responses from attending physicians regarding LP medication use were obtained. Results: 8463 patients were reviewed and 4447 (53%) were included in the study after exclusion criteria. Of 3017 patients, 67% were less than 2 years old, 23% were 2-12, 9% were 12-21, and 1% were greater than 21. 29% of LP attempts were unsuccessful. Of 2032 patients who had medication used, 15% received fentanyl, 15% midazolam, 11% morphine, 8% propofol, 7% nitrous, and 2% ketamine. Greater than 30 combinations of medication were used. In the multivariate regression, use of overall sedation alone (OR 0.31 CI 0.24-0.39) was associated with LP success; use of analgesia alone was not (OR 1.23 CI 1.07-1.41). Specifically, fentanyl (OR 0.76, CI 0.62-0.97) and ketamine (OR 0.29, CI 0.12-0.67) were associated with higher chances of success. Morphine, propofol, nitrous, and midazolam were not significant (see Figure 1). Overweight (OR 1.25 CI 1.02-1.54) and underweight (OR 1.27 CI 1.04-1.57) patients had greater odds of failure. Trainee under supervision was associated with unsuccessful LP (OR 1.59, CI 1.34-1.90). Of data abstracted from unsuccessful charts, providers were changed in 24% of cases, LP position was changed in 24% of cases, sedation was applied during the 1st attempt in 23% of unsuccessful cases, and post-sedation side effects occurred in 2.6% of cases. Of physicians surveyed, midazolam was the most preferred medication, followed by fentanyl. Conclusion: A significant variance exists in medication use during the pediatric LP. The use of sedation decreased the likelihood of unsuccessful LP attempts. Of the analgesic and sedatives studied, ketamine and fentanyl were best associated with success. Among physicians surveyed, there was no clear consensus regarding medication use. These data suggest the need for a quality improvement study to standardize LP medication protocol.
MS R/QI	**Faith Myers** Sarah Swenson D. Phil, Ashley Borgschatz, Dorothy Curran MD, Kelly Dietz MD, Patricia Hobday MD, Jeff Louie MD	***Are General Emergency Department Providers Following AAP Guidelines in the Management of Bronchiolitis?*** 2014 American Academy of Pediatrics (AAP) guidelines on bronchiolitis discourage the use of routine imaging and viral testing in the diagnostic assessment of otherwise healthy children. Although there is evidence that pediatric emergency departments adhere to these guidelines, less is known about general emergency department (GED) practices. As the majority of bronchiolitis cases are seen in GEDs, it is useful to observe current practices to better understand opportunities to improve adherence to guidelines. This study aims to quantify the frequency of chest radiographs (CXR) and RSV testing in otherwise healthy children with symptoms consistent with bronchiolitis at a local GED. Methods: We abstracted 197 charts from a local GED based on ICD-10 codes for pneumonia, bronchiolitis, RSV, wheezing, respiratory distress, and respiratory failure. We included children 24 months of age and younger who were seen in the ED from October 2016 to May 2017 with clinical symptoms consistent with bronchiolitis. We excluded medically complex patients, repeat visits within 72 hours, and children previously seen with bronchiolitis symptoms during 2016-2017 RSV season. Variables abstracted included age, gender, CXR, official reading by off-

		site radiologist (OSR), triage vitals, and physical exam findings. All radiographs were re-read by a Pediatric Radiologist (PR). Results 134 patients met clinical criteria for bronchiolitis. The mean age was 10.32 months (range 3.32 to 23.64 months), (95% CI, 9.24 - 11.40). There were 70 males (52.2%) and 64 females. Of the 134 children, 74 (57.5%) were tested for RSV: median age 6.96 months, (95% CI, 7.764 - 10.735). 44 children had positive rapid RSV testing: median age 7.74 months, (95% CI 7.16 - 10.92). 30 children had negative rapid RSV testing: median age 6.78 months (95% CI 7.00 -12.10). 98 patients (73.1%) received CXR with a median age of 9.78 months (range: 0.36 months to 23.64 months). OSR read 29 CXR as consistent with pneumonia, whereas PR read 0 as pneumonia. Of the 36 patients who did not receive CXR, the median age was 10.11 months (range: 1.92 months to 22.56 months). Comparing OSR and PR readings revealed many discrepancies. Conclusions In our small cohort, 73 percent of children who had clinical findings of bronchiolitis received a CXR, and 57 percent were tested for RSV, yet recent AAP guidelines recommend against routine imaging and viral testing. Our findings suggest GED providers do not adhere to AAP guidelines, and further education strategies are needed to decrease unnecessary radiation exposure and healthcare costs associated with bronchiolitis. An unexpected finding was the large discrepancies of CXR interpretations made by outside radiologist versus pediatric radiologists. This finding highlights fundamental differences in training.
MS R/QI	**Kara Sherva** Paulina Marell, Sameer Gupta, Naomi Goloff MD	***What Impedes Timely Pediatric Palliative Care Consults? A Preliminary Report*** Pediatric palliative care (PPC) provides support focused on comfort and wellbeing for patients with serious illness and their families and assists with difficult care decisions, aiming to align medical care with the goals and values of the patient and family. Studies have shown that despite the benefits of PPC, many patients do not benefit from timely consultation.1 Little, however, is known about the reasons for this. Objective: The purpose of this QI project was to identify barriers to PPC to inform an intervention aimed at increasing timely consultations at our hospital. Methods: Our team surveyed members of the inter-professional healthcare team as well as patients/families to assess attitudes, knowledge, and barriers related to PPC. In addition, parents gave narrative feedback at a hospital parent advisory board meeting. Results: Survey of healthcare workers (n = 243) showed that nurses had the smallest percentage of very favorable opinions toward PPC (64%), with the NICU (65%) and the ED (57%) as the units reporting lowest in that category. Nurses also had the lowest percentage of "good" or "excellent" understanding of PPC (27%), with the NICU (29%) and the ED (29%) again reporting lowest in that category. Attitude was positively correlated with knowledge: 93% of respondents who rated their understanding as excellent had a very favorable opinion of PPC. The top barriers to PPC consultation were not knowing whose responsibility it was to order a consultation (24%) and worry about undermining parental hope (19%). More than half (68%) of respondents indicated that they ask permission of the patient/family before ordering a PPC consultation. Respondents reported that PPC consultations generally occurred when curative interventions were no longer possible (37%) and during end-of-life care (24%). Survey of patients/families (n = 33) showed that only 30% had a confident understanding of PPC services and 55% had received information regarding PPC from medical staff. Seventy percent had a favorable view of PPC while 21% needed more information to form an opinion. Comments from the parent advisory board indicated that lack of information regarding PPC is the major barrier for PPC utilization for patients/families. Conclusions and future directions: These results indicate that attitudes toward PPC and lack of education regarding PPC are the most common barriers to timely PPC consultations. As well, lack of information is likely a major contributing factor to unfavorable attitudes. Our intervention will aim to improve knowledge about and thus attitudes toward PPC. With each intervention we will complete a Plan-Do-Study-Act (PDSA) cycle and evaluate its success in increasing timely PPC consultations, with the ultimate goal of improving quality of life and goal-oriented care for our pediatric patients.

MS R/QI	**Phil Plager**	***Analysis of 31 Pediatric Patients Who Referenced the Netflix Series '13 Reasons Why' on Presentation to a Single Health System*** The Netflix show 13 Reasons Why tells the story of a teenager who commits suicide. As media and fictional portrayals of suicide are known to influence suicidal behaviors, professional organizations worried that the show would lead to a spike in suicidality among its viewers. Objective: We wished to determine if 13 Reasons Why was referenced among pediatric patients in our large healthcare system in Minnesota in the period surrounding the show's debut, and if so, understand the context for these references. Methods: We searched all clinical documentation for patients under 18 for the search terms "13 Reasons" or "Thirteen Reasons" between October 1, 2015 (the month the show was announced) and September 9, 2017 (~6 months after the show's debut) in the University of Minnesota-affiliated Fairview Health Services clinical data repository. We recorded demographics and location for each reference, and determined the context for each by looking for association with a presentation related to suicide and presence of a mental health diagnosis at the time of the encounter, and used grounded theory approach to identify themes to the context of the reference. Results: 13 Reasons Why was mentioned in 63 separate clinical notes of 31 unique pediatric patients across our healthcare system. Most references were documented in a hospital setting (59%; 37), and all but one took place during an encounter related primarily to the patient's mental health. Most patients made these references during an encounter related to suicide (71%; 22). The most common context of the reference (32%; 10) was the patient self-reporting that the show (or in two cases, the book) was contributing to their worsening mental health symptoms with nearly all (90%; 9) of these patients presenting with suicidal thoughts or attempts. Conclusion: Thirty-one pediatric patients in our healthcare system had documented references to 13 Reasons Why in their chart in the period surrounding the show's debut, with nearly three-quarters in the context of a presentation for suicidal ideations or attempt. While unable to speak to causality of the show contributing to these presentations, the most common context was the patient explicitly stating that viewing had made their mental health symptoms worse.
		<u>Resident</u>
R CV	**Tiffany Albrecht, MD** Kristina Poss, Mark Schleiss MD	***Haemophilus Influenzae Type A Sepsis in a Child with Congenital Asplenia*** Conjugate vaccines for Haemophilus influenzae serotype B (Hib) have led to a dramatic decline in the incidence of invasive Hib infections, but non-type B strains are emerging in pediatric populations. In particular, Haemophilus influenzae type A (Hia) has recently been identified as an increasing cause of invasive infections including sepsis, meningitis, and septic arthritis. The clinical presentation is similar to that observed with invasive Hib disease in the pre-vaccine era. Hia is an encapsulated organism with a polyribosyl phosphate capsule similar to Hib. Hia invasive infection may be a presenting sign of an underlying immune deficiency, as is described in this case. Case: A five-year-old, fully vaccinated, Native American female presented to a rural community hospital with four days of vomiting and diarrhea, followed by fevers and progressive lethargy. Blood cultures were obtained and she was commenced on empiric ceftriaxone and vancomycin then transferred to a pediatric hospital. Upon arrival, she was febrile, tachycardic, tachypnic, and hypotensive. Physical exam was notable for lethargy and diffuse abdominal tenderness. Labs showed lactic acidosis, acute kidney injury, thrombocytopenia, and elevated inflammatory markers with C-reactive protein 286 mg/L and procalcitonin >200 ng/mL . A peripheral smear showed presence of Howell Jolly bodies. An abdominal ultrasound identified asplenia. Within 24 hours of admission, blood cultures grew gram negative cocci subsequently identified as Haemophilus influenzae, serotype A. Antibiotic therapy was narrowed to

		ceftriaxone with ongoing clinical improvement. A lumbar puncture was normal, excluding Hia meningitis. However, three days after admission, the patient was noted to have left knee and elbow pain. A knee radiograph demonstrated a large joint effusion. Aspirated knee synovial fluid had a leukocyte count of 16,750 cells per µL (96% neutrophils), although no organisms were noted on gram-stain. In the following days, the patient had irrigation and debridement of her left knee, elbow, and hip due to progressive pain. Tissue cultures of intraoperative biopies were ultimately negative. The patient completed a six-week course of intravenous ceftriaxone. At the time of follow-up, she was doing well with restored function of her left elbow and hip but with some ongoing left knee stiffness. Discussion: As this case illustrates, Haemophilus influenzae serotype A (Hia) is an emerging pathogen that can cause significant disease in pediatric patients, indistinguishable from Hib. In individuals with asplenia, Hia is important to consider in the differential diagnosis of sepsis. High risk individuals include immunosuppressed patients. American Indian and Alaska Native communities, where the prevalence of Hib was historically higher, also have a higher prevalence of Hia. Select populations may benefit from new vaccine development for this emerging agent.
R CV	**Margot Zarin-Pass, MD** Gabrielle Hester, MD MS	***A common admission that became very uncommon*** A 5-year-old girl was admitted to the general pediatric service overnight during a busy winter viral season with first-time complex febrile seizures felt to be secondary to Influenza A infection. The admitting team documented a history from the Dad notable for surgery after birth where “skin from her butt was put on her head.” An EEG was obtained and was unremarkable and the patient was receiving supportive cares for influenza with intravenous fluids and oseltamivir. The hospitalist teaching team noted the curious documented past history and investigated further discovering that the patient had an extensive neonatal ICU stay, diagnosis of cutis aplasia and diagnosis of bicuspid aortic valve. The mother had abandoned the child to the father shortly after NICU discharge and as such he was unfamiliar with any details of the child's neonatal course. The patient had not received any of the recommended follow-up for her chronic medical conditions nor did she have a primary care provider. A detailed exam was notable for notable for shortened digits and a large scalp defect. An MRI was attempted to look for underlying brain defects associated with cutis aplasia but was deferred due to the increased risk of sedation with her acute illness. Upon discharge the team scheduled outpatient follow-up for this patient with cardiology, imaging, and neurosurgery and a new primary care provider (a resident on the team). Based on her clinical presentation, the neurosurgery team suspects a diagnosis of Adams- Oliver syndrome. This is a rare genetic syndrome consisting of congenital cutis aplasia, cardiac anomalies, shortened digits, and seizures. The prognosis is good, but the individuals require specialty follow up as well as genetic counseling as the disorder can be autosomal recessive or dominant. The patient is awaiting an appointment with genetics. This case demonstrates the importance of NICU follow up and how families can still fall through the cracks of our system. We feel it also shows the perils of not doing complete chart reviews on admissions even during busy viral seasons. It reminded us to always maintain curiosity for understanding things that are unexpected. Finally, it allowed us to learn about a rare genetic syndrome and ultimately provide appropriate care for this patient.
R CV	**Stacy Romero Willson, MD** R Scott Velders	***Abnormal eye exam on newborn visit: Case of congenital aniridia*** Early detection of congenital ocular abnormalities is essential in preserving vision, minimizing complications, and optimizing development. Routine newborn eye examinations can often be completed quickly and focus on ruling out pathologies, including infections and retinoblastoma. Case: 4-day-old term male infant presented for newborn check. Mom speaks Spanish only and the history was obtained with help of an in-person Spanish interpreter. The pregnancy and delivery were uncomplicated and he did well post-delivery. He was breastfeeding well and

		already above birth weight. Mom had no concerns at this visit. His vitals and growth parameters were normal. On examination, his anterior fontanelle was full, though not bulging. His red light reflexes were large, but equal, and his pupils were unresponsive to light. There were no corneal abnormalities, conjunctival injection or ocular drainage, and there were no abnormal eye movements. The remainder of his exam was normal. Mom provided no significant family history at this time. He was urgently referred to Pediatric Ophthalmology, who saw him the same day. There, mom was distraught and revealed a family history of aniridia in the patient's oldest brother and cataracts in the patient's father and second brother. On examination, he was found to have bilateral aniridia with foveal hypoplasia and no evidence of cataract or glaucoma. The most likely diagnosis is autosomal dominant aniridia given his family history, though at this time cannot rule out a mutation in WT1. A follow-up renal ultrasound was recommended. Since then, he has been followed by Pediatric Ophthalmology. He has developed early onset nystagmus and worsening visual acuity. He now wears glasses. Genetic testing is recommended to determine if he has a mutation in PAX6 as well as WT1, which puts him at risk for WAGR syndrome (Wilm's tumor, aniridia, urogenital abnormalities and intellectual disability). A renal ultrasound was completed and read as normal. Discussion: This case illustrates the importance of the newborn exam in detecting sight-threatening ocular abnormalities. This patient was seen on multiple occasions in the newborn nursery without recognition of his pupillary abnormality. Often, the newborn eye exam concentrates on presence of red light reflex. However, failure to closely inspect can result in overlooking abnormalities. When the patient was seen in the the pediatrics clinic, it was apparent he had a pupillary abnormality requiring further evaluation, thus leading to his formal diagnosis. Patients with aniridia have extreme light sensitivity and can have corneal irritation and pain. They have varying degrees of visual impairments and can develop cataracts and glaucoma. Close monitoring by Pediatric Ophthalmology is essential in preserving vision where able and minimizing risks of complications.
R CV	**Meghan Fanta, MD**, Gretchen Colbenson, BS; Johannah Scheurer, MD; Sophie Arbefeville, MD; Patricia Ferrieri, MD	***Early onset neonatal sepsis due to vertical transmission of Pasteurella multocida*** Neonatal sepsis is a major contributing cause of neonatal morbidity and mortality. Early onset sepsis is typically due to vertical transmission of bacteria during the intrapartum period and symptoms present in the first three days of life. Patient presentation and hospital course: An appropriate for gestational age neonate was born to a 26 year old G1P1 at 38 weeks. Maternal course was generally unremarkable. Respiratory distress was first noted 5 hours after birth. Clinical examination showed grunting which progressed to lethargy. Broad antibiotic coverage was started. The infant required fluid resuscitation, intubation, and vasoactive medications. The initial blood culture grew Pasteurella multocida, and the tracheal culture also grew Pasteurella multocida. Antibiotic therapy was narrowed with susceptibilities to ceftazidime with a brief course of gentamicin for synergy. Further history revealed multiple pets in the home including two cats and one dog; family members denied any bites or scratches. Maternal vaginal culture was positive for Pasteurella multocida. Microbiology: The bacteria grown from the patient's blood, the tracheal aspirate, and the maternal vaginal sample were identified as Pasteurella multocida by MALDI-TOF mass spectrometry and were further characterized by 16S rRNA gene sequencing. To determine the similarity between the three isolates, their sequences were aligned to one another using the NCBI nucleotide BLAST function. This showed that the three separate sequences were a 100% match to each other for Pasteurella multocida, subspecies septica. No specimens from cats in the home were obtained. Discussion: This case describes a newborn infant who developed sepsis shortly after birth and had cultures positive for Pasteurella multocida. Pasteurella is a rare cause of sepsis in the neonate. Both early and late-onset neonatal infections due to Pasteurella have been reported including sepsis, bacteremia, meningitis, osteoarthritis, and conjunctivitis. Reported transmission routes include traumatic and atraumatic animal exposure, vertical, and horizontal. Few reports have confirmed the same

		organism linking exposure and neonatal infection. To our knowledge, ours is the second report to confirm genetically vertical transmission from mother to infant. Future implications include increased understanding of isolates and associated virulence as well as recommendations for future pregnancies for this mother.
R R/QI	**Ashley Phimister, MD**, Catherine Koozer MD, Heidi Moline MD, Mark Schleiss MD, Erin Osterholm MD	***Clinical sequelae in patients receiving valganciclovir and/or ganciclovir therapy for congenital cytomegalovirus (cCMV)*** This study aims to identify the common side effects seen with use of valganciclovir and/or ganciclovir for the treatment of cCMV. Methods: The electronic medical record was queried to identify patients between the years of 2006-2016 with positive urine or serum CMV results admitted to the University of Minnesota Masonic Children's Hospital's NICU. Chart review of these patients was performed. Results: A total of 16 patients in the NICU were treated with valganciclovir and/or ganciclovir for cCMV. Four patients were born at term and twelve patients were born preterm. The average gestational age at birth was 31 weeks with ages ranging from 22 weeks to 39 weeks. Of the total 16 patients, 81% experienced neutropenia after starting treatment, with neutropenia was defined as an absolute neutrophil count less than 1500. Of those with neutropenia, 77% required G-CSF. Twenty-five percent of all patients required a pause in treatment due to neutropenia. Of the twelve preterm infants, 92% experienced neutropenia. Of those preterm infants with neutropenia, 82% required G-CSF. Of the preterm infants, 33% required a pause in therapy due to neutropenia. One preterm patient experienced a serious bacterial infection. Conclusions: While treatment with valganciclovir and ganciclovir has improved audiological outcomes in several studies, it is important to be mindful of the side effects of long-term antiviral therapy for congenital CMV, particularly neutropenia. This consequence may be of particular significance in preterm infants with immature immune systems and high risk for life threatening secondary infections. Our long-term goal is to better understand the complex pharmacokinetics of these drugs when used for infants, a high-risk population, for which guidelines are still evolving.
R R/QI	**Erin Balay, MD** Matthew Thompson, Shane McWhirter, Leah Krause, Jeff Louie, Patricia Hobday, Lucie Turcotte	***Febrile Neutropenia in the Emergency Department: Improving Timely Antibiotic Administration in Patients with Indwelling Central Lines: A QI Initiative Update*** An indwelling port and central vein catheter is commonly placed in children with cancer undergoing chemotherapy. These children often present to the ED with febrile neutropenia due to chemotherapy-induced immunosuppression. It has been demonstrated that antibiotic administration in <60 minutes reduces mortality in patients with septic shock.2 Administration of antibiotics within <60 minutes of arrival is a quality-of-care measure for pediatric oncology patients with febrile neutropenia in the ED.1 In our ED, we initiated a QI project to determine barriers to timely administration and to improve time-to-antibiotics in this population to within the quality-of-care benchmark over 1 year. Methods: Through chart review, qualifying patient encounters were identified. Inclusion criteria were: ages 1 month to 21 years, febrile oncology patients, suspected neutropenia, and implanted port device. Historical data was collected from 2014 through 2016. Interventions were initiated on 1/1/2017 and post-intervention data were collected monthly through 12/31/2017. I-charts were constructed from data. Encounters with delays causing time-to-antibiotics to be >60 minutes were qualitatively analyzed for delay sources using ED patient care timelines and EMR documentation. Results: Staff surveys determined the barriers to timely antibiotics included: limited parental knowledge of port information, deficiencies of pre-arrival LMX, and non-standard EMR port information. 205 encounters were reviewed; 156 pre-intervention and 49 post-intervention. Average time-to-antibiotics was reduced significantly by 13 minutes from 68.8 to 55.9 minutes (P=0.02). The median time-to-antibiotics was reduced by 9.7 minutes from 59.2 to 49.5 minutes. The percentage of encounters with time-to-antibiotics of >60 minutes was reduced from 44% to 28%. LMX delays decreased by 4.8% from 19.6% to 14.8%. Systems delays, including urine culture or chest x-ray prior to antibiotics,

		decreased by 10.61% from 18% to 7.4%. Conclusion: QI interventions initiated in 2017 included: port information accessible in the EMR Snapshot tool, LMX reminder using parental education, and ED staff notification of the QI initiative to improve time-to-antibiotics. Through our analyses, we believe that these interventions produced a statistically significant decrease in average treatment time to within the quality-of-care benchmark. Additionally, we reported an overall decrease in the percentage of patients who experienced delays in antibiotics, with specific improvements in the systems and LMX categories. Systems improvements are likely related to staff acknowledgement of the importance of expedited antibiotic administration. Parental LMX improvement is likely related to improved education on the importance of pre-arrival LMX application. Limitations to this study include restrictions of retrospective chart review such as: potential for missed encounters and difficulty assessing parental knowledge. Additionally, small sample size may limit the power to detect secondary delay outcomes. Next steps for this project include maintaining the current quality-of-care level while gathering larger sample sizes to further analyze and decrease delays in time-to-antibiotics in this population.
R R/QI	**Brinda Desai, MD** Joanna Ekstrom MD, Rachel Cafferty MD, Meghan Fanta MD, Shane McWhirter MD, Danielle Quallich MD, William Sveen MD, James Gray MD, Erin Gutowski MD, Daniel Nerheim, Cynthia Davey MS, Kari Schneider MD	***An important conversation: How well do primary care physicians and parents do at talking to teens about sex?*** Teens/young adults account for more sexually transmitted infections (STIs) than all other ages combined. Primary care provider (PCP) visits are opportunities to provide health care services to treat and prevent STIs. Similarly, parent-child communication has been shown to protect against teen sexual risk-taking behavior. Objectives: Assess whether or not PCPs discuss sex with adolescents and/or offer screening for sexually transmitted infections (STIs) and determine if parents/guardians of adolescents discuss sex with their teens. Methods: Prospective study of adolescents and parents/guardians of adolescents aged 13-17. Passersby approached or were recruited to a booth at the 2017 Minnesota (MN) State Fair and, if met inclusion criteria, were given an 18-question survey. Adolescents were asked questions designed to evaluate if they had seen a PCP in the past year, were asked about sexual activity and/or offered STI screening, and whether or not they discuss sex with their parents/guardians. Parents/guardians were asked similar questions about their adolescent. Frequencies, Chi-square analyses, and logistic regression were used to evaluate the variables. Results: 582 from MN aged 13-17 years and 516 MN parents were surveyed. 90% of teens had been seen in the past year by PCP. 55% of these were asked about sex and 13% were offered STI testing. Older teens were less likely to have seen a PCP in last year ($p=0.034$) but were more likely to be asked about sex (OR 6.8, $p<0.0001$) or offered STI testing (OR 9.8, $p=0.008$). Females were also more likely to be asked about sex (OR 1.9, $p=0.003$). White adolescents were less likely than other ethnicities to be offered testing (OR 4.0, $p = 0.036$). 49% of parents indicated that their child's PCP discusses sex while 24% did not know. 25% felt that PCPs should not discuss sex. 90% of parents stated that they talk to their teens about sex while only 39% of teens reported the same. A female parent was more likely to discuss sex (OR 2.8, $p = 0.002$). Parents were less likely to report discussing sex if the teen was younger (OR 0.3, $p = 0.035$) or if parent's ethnicity was anything other than white (OR = 0.33, $p = 0.014$). Conclusions: Low numbers of adolescents are being asked about sex by their PCPs. Parents feel that they are communicating with their teens but this is not supported by teen report. Further work can be directed towards improving sexual history taking and in educating parents on the importance of these discussions occurring in the PCP's office as well as at home.