were male. Viral detections were rhinovirus 75 (40.9%), RSV 45 (24.5%), influenza which, 37 (20.2%) had two viruses detected. Mean age was 1 year old and 56.5% (RSV). Means for white blood cells (WBC), neutrophils, lymphocytes and CRP were cal

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Vietnam to describe demographic, epidemiological, and clinical features.

From April 20 to July 10 in 2019, a total of 11 patients with malignancies were identified as having measles, with a median age of 4.0 years (range: 1 years to 9 years). Of these 11 patients, 2 (18.2%) had not received any dose of measles vaccine, 4 (36.4%) had received 1 dose of measles vaccine, and 5 (45.5%) had received the recommended 2 doses. All patients had fever with the median temperature of 39 degrees Celsius (range: 38.5–39.5), and median fever duration of 7 days. All patients had cough and rash, while 3 (27.3%) were complicated by pneumonia, and 2 (18.2%) had elevated liver transaminases. All patients had hospital visits or were hospitalized before measles onset, with the median length of stay of 10 days (range: 7–24 days). All patients were likely to exposed each other. 100% of these patients recovered.

Children with cancer are at extra risk of measles infection due to their immunocompromised status. Getting vaccinated is the best way to prevent measles, and improved infection control is critical for the prevention of measles in patients with malignancies. Following this measles outbreak, a designated outpatient area was established to separate the inpatient unit and limit hospital transmission.

Leukocytes and C-Reactive Protein Levels in Children with Influenza- positive and Influenza-negative Viral Pneumonia in a Third-level Pediatric Center in Mexico City from 2011 to 2016

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Influenza has been a major source of morbidity and mortality worldwide. Children are one of the most susceptible groups for severe influenza. Clinical differentiation between viral and bacterial pneumonia is difficult to assess in children, so the aid of the complete blood count (CBC) and C-reactive protein (CRP) are used to differentiate between them. However, differential diagnosis between influenza-positive and -negative viral pneumonia is difficult. CRP levels have been found to be higher in H1N1 influenza adult patients. However, there are no studies regarding CBC, and CRP levels in pediatric patients with influenza-positive and -negative pneumonia.

Methods. From 2011 to 2016, we found children less than 18 years old with viral pneumonia who had positive viral RT-PCR test for adenovirus, bocavirus, influenza, parainfluenza, coronaviruses, metapneumovirus, and respiratory syncytial virus (RSV). Means for white blood cells (WBC), neutrophils, lymphocytes and CRP were calculated. Comparisons between influenza and other viral respiratory pneumonia WBC and CRP means were made. Student’s t-test was used for statistical analysis.

Results. We analyzed 183 patients with positive viral pneumonia cases; of which, 37 (20.2%) had two viruses detected. Mean age was 1 year old and 56.5% were male. Viral detections were rhinovirus 75 (40.9%), RSV 45 (24.5%), influenza 31 (16.9%), metapneumovirus 30 (16.3%), bocavirus 20 (10.9%), parainfluenza 14 (7.6%), adenovirus 11 (6.0%), coronavirus 3 (1.6%) and adeno virus 2 (1.1%). Mean influenza WBC were 10,900 ± 2040/µL, lymphocytes were 6988 ± 1510/µL, lymphocytes 2882 ± 826/µL, and CRP 5.41 ± 1.9 mg/dL. Mean influenza negative, viral-positive pneumonia were

WBC 12227 ± 868/µL, neutrophils 6787 ± 696/µL, lymphocytes 4469 ± 426/µL. CRP 2.81 ± 0.56 mg/dL. Lower lymphocyte counts (P = 0.002) and higher CRP levels (P = 0.019) were found in patients with influenza comparing them with pneumonia caused by other viruses.

In our study, children with positive influenza pneumonia showed lower levels of WBC and higher levels of CRP compared with negative influ-

Influenza positive and Influenza-negative Viral Pneumonia in a Third-level Pediatric Center

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Background. Antimicrobial agents are the second most common prescribed drugs in hospital settings. Antibiotic resistance is a major public health problem. Some studies have found that 20–50% of antibiotics prescriptions are inadequate or not nec-

ampicillin-sulbactam is the second most common prescribed antibiotic in inpatients children in our hospital. We designed a quality improvement study to im-

ampicillin-sulbactam prescription in a third-level children hospital in Bogotá, Colombia.

Methods. A before and after study was designed. We obtained days of treatment (DOT) for ampicillin-sulbactam in last 3 years (2017, 2018, and 2019). In October of 2019, we included ampicillin-sulbactam as a targeted antibiotic in our ASP. We focus the efforts in 2 principals’ strategies: Educative strategy and audit and feedback strategy. Educative strategy included a blended learning intervention and audit and feedback strategy included surveillance of prescriptions in real time to evaluate local guidelines adherence with feedback to prescribers. We designed a form to collect and analyze data with Epi Info.

Results. In 2 months of surveillance, we reviewed and analyzed 67 prescriptions. Median age of patients was 2 years (0.75–7.5 years). The main diagnosis was pul-

monary infection in 70.1% (multilobar pneumonia 13 patients, lobar pneumonia 8 patients and bacterial co-infected bronchiolitis in 5 patients). Three prescriptions were based in etiologic isolation while 64 was an empiric formulation. Only 24 prescriptions (35%) were considered adequate according to local guidelines. The principal reasons of inadequate prescription were the possibility to use a narrow-spectrum antibiotic (58.1%) and error about inadequate infectious disease diagnosis (39.5%). In 43 inadequate prescriptions, ASP changed the antibiotic in 24 patients, stopped all antimicro-

bial therapy in 14, and changed to oral rout in 4. In the patient's follow-up, all have an adequate clinical course, and only 3 required to restart antimicrobial therapy.

There were no deaths related to infectious diseases. In the educational strategy we trained 34 staff members (32.9%) with lectures and 72 staff members (69.2%) using virtual strategy. We use a pre- and post-test evaluations, with a score improvement in 33% after the educational strategy. Finally, we compared DOT of ampicillin-sulbactam for the last 3 years and we found a reduction of 65% in prescription between October 2017 and October 2019 (Figure 1).

Conclusion. This is the first quality improvement study with an ASP targeting a narrow-spectrum antibiotic in children. Many ASP focused their efforts only in broad-spectrum antibiotics, but few studies have been published in narrow-spectrum antibiotics. The implementation of an ASP to improve prescription of ampicillin-sulbactam had a dramatic impact in reduction of prescriptions in our settings. The educational strategy using blended learning strategy is especially valuable in hospital education because virtual learning has a great flexibility and if facilitated by the high availability of mobile devices.