Conclusion The interim audit has shown that we have already made one HDU bed available for other patients for the equivalent of 2 months during the busiest period of the year when critical care beds are at crisis point. There were no adverse events during this new initiative and the median length of hospital stay for this patient group was not increased.

**GP279 A REVIEW OF THE DIAGNOSTIC EVALUATION OF COMPLICATED PARAPNEUMONIC EFFUSION OR EMPYEMA IN AN IRISH TERTIARY HOSPITAL**

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**Introduction** Complicated parapneumonic effusion or empyema is a relatively common complication of pneumonia, often requiring thoracocentesis. The diagnostic yield with traditional culture of blood or pleural aspirate specimens is low, emphasizing the role for new molecular techniques to improve identification of the responsible pathogens.

**Aim** The purpose of this study was to review the laboratory investigation of childhood complicated parapneumonic effusion or empyema with the view to optimising diagnosis.

**Methods** A retrospective review of paediatric cases of complicated parapneumonic effusion or empyema requiring thoracocentesis was undertaken in an acute tertiary referral paediatric hospital, over a five year period, from January 2014 to December 2018. Cases with clinical and radiographic findings consistent with a diagnosis of complicated parapneumonic effusion or empyema were only included if a sterile site specimen was taken for diagnostic microbiologic evaluation. Baseline patient demographic data, clinical findings, laboratory indices, microbiology results and imaging findings were collected.

**Results** Sterile site specimens from 43 children with parapneumonic effusion/empyema were identified (females,60%). 79% of the children were younger than 5 years of age. 45% (14 of 31) of children who had virologic testing performed had at least one respiratory virus detected. Six children had multiple viruses detected. A causative bacteria was identified in 24 cases (56%), 6 by conventional culture (pleural fluid, 5; blood,1) and 21 by PCR (pleural fluid, 20; blood, 3). Three children had both culture and PCR positive. PCR had the highest detection rate of causative organism: pleural fluid PCR positive, 52% (20 of 38 tested); blood PCR positive, 50% (3 of 6 tested). Pleural fluid culture positive, 11.6% (3 of 43 tested); and blood culture positive 2.5% (1 of 39 tested). *Streptococcus pneumonia* was the causative organism detected in 9.5% cases.

**Conclusion** This retrospective review confirms that in paediatric cases of complicated parapneumonic effusion or empyema traditional microbiological culture of sterile site specimens infrequently identifies a causative organism. For such culture negative cases, appropriate PCR testing significantly improves the detection rate of causative organisms.