

### **EVALUATION OF BIOFIRE® FILMARRAY® PNEUMONIA PANEL PLUS FOR DETECTION OF BACTERIA IN TRACHEAL ASPIRATE SPECIMEN OF CHILDREN AGES 1 MONTH TO 18 YEARS OLD DIAGNOSED WITH VERY SEVERE PNEUMONIA ADMITTED AT THE PEDIATRIC INTENSIVE CARE UNIT OF PHILIPPINE CHILDREN'S MEDICAL CENTER: A PILOT STUDY**

MARK CHRISTOPHER D.A. DEATRAS, M.D. CHARISSE JOY M. LIM, M.D. and LILAC MARED O. SOLLESTA, M.D. RODELIA G. CIPRIANO, M.D. and MARY ANN C. BUNYI, M.D. Supervising Investigators Principal Investigator Co-Investigators

# Background

The Biofire FilmArray Pneumonia Panel plus is an emerging technology, which is rarely employed in clinical specimen detection. Studies on its clinical significance in diagnosing very severe pneumonia is therefore sparse. This study will evaluate the performance of Biofire FilmArray Pneumonia Panel plus by comparing it to the conventional culture for tracheal aspirates.

# **Objective**

To evaluate the Biofire FilmArray Pneumonia Panel plus for detection of bacteria in tracheal aspirate specimen of children ages 1 month to 18 years old diagnosed with very severe pneumonia admitted at the pediatric intensive care unit of the Philippine Children's Medical Center

# **Methods**

Prospective clinical evaluation conducted from was September 2019 to August 2021. Fifty five unique clinical specimens were analyzed. Data were described using means and standard deviations for continuous variables and frequency and counts percentages for discrete or categorical variables. Tests of accuracy such as sensitivity, specificity, positive and negative predictive values and likelihood ratios, with their 95% confidence intervals, were done.



### Results

The sex distribution is almost equal with a median age of 4 years old. Majority of the patients had normal nutritional status. Most of the patients had no known comorbidity. Majority of the patient were discharged from the hospital improved.

### Conclusion

The overall sensitivity of 82.86%, overall specificity of 92.17%, overall positive predictive value of 23.97%, overall negative predictive value of 99.45%, overall positive likelihood ratio of 10.58, and overall negative likelihood ratio of 0.19.

## Recommendations

Use of a quantitative or semi-quantitative reports for routine microbiologic studies, comparison of the film-array pneumonia panel plus to gold standard viral studies, parallel run of a standard against the antimicrobial resistance gene patterns and a multicenter study involving pediatric patients