Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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**Results:** The data from 2015 was anonymised, collated, and outliers removed. The data were split into categories based on the assay manufacturer who provided the amplification reagents. Outliers were assessed through the application of Grubbs' analysis to each assay manufacturing group. Datasets were considered suitable for inclusion if more than one laboratory reported data using the same assay manufacturer after removal of non-compliant data and outliers. For CMV, 120 quantitative datasets across 5 assays were returned, 106 for EBV, 132 for JCV and 144 datasets for BKV. Assay manufacturing group datasets were compared against the group consensus and the dPCR assigned values.

**Conclusions:** The comparison of inter-laboratory data for viral load determination is limited in the absence of certified control materials or international standards due to potential assay variation. The aim of this study was to compare the quantitative performance of dPCR against the key commercial assays available for the four viral targets. The results showed that the dPCR results aligned closely with the quantitative values determined using commercial assays and the in-house qPCR assay independent of an International Standard being available. Historical assay data (not shown) support this data and show the close alignment between qPCR and dPCR assays. Digital PCR allows quantitation without the need for a calibrated standard and from the preliminary data presented here indicates a method by which to calibrate controls allowing comparison of results between laboratories.

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**Presentation at ESCV 2016: Poster58**

**Comparison of two multiplexed PCR assays for respiratory virus detection in ICU patients: FilmArray® respiratory panel and Allplex™ respiratory full panel**

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**Background and objectives:** The FilmArray® Respiratory Panel (BioFire Diagnostics, LLC, Salt Lake City, UT, USA, a bioMérieux Company) is a multiplexed automated PCR assay that integrates specimen processing, nucleic acid amplification, and detection into a pouch, and detects 17 respiratory viruses plus three bacteria. We compared it to another multiplexed PCR assay, Allplex™ Respiratory Full Panel (Seegene, Inc., Seoul, Korea) composed of 4 different panels in a multiplex One-step Real-time RT-PCR assay to detect and identify 16 respiratory viruses and 7 bacteria in patient’s specimens. We conducted a study to evaluate the performance of the FilmArray® compared to the Allplex™ for the detection of respiratory viruses from different respiratory specimens in ICU patients. Bacteria were not taken into account in this study.

**Methods:** A prospective comparative study was carried out in 50 respiratory specimens (nasal swabs, nasopharyngeal lavage, bronchoalveolar lavage, bronchoaspirate and sputum) collected from ICU patients between March and May 2016. One aliquot was processed with the Allplex and a second aliquot was tested by the FilmArray® assay. For the Allplex™ assay, viral nucleic acid was extracted using the BioRobot EZ1® (Qiagen). Both assays detect influenza A (Flu A; seasonal H1, subtype 2009 H1 and H3) and influenza B (Flu B), respiratory syncytial virus (RSV), adenovirus (AdV), human rhinovirus/enterovirus (HRV/E), parainfluenza 1-4 (PIV 1-4), human metapneumovirus (HMPV) and coronaviruses (CoV) NL63/229E/OC43. Additionally, FilmArray® detects CoV HKU1 and Allplex™, bocavirus (BoV). For discrepant results, virus-specific RT-PCR was performed (RealStar® RT-PCR Kits, Altona Diagnostics, Hamburg, Germany).

**Results:** Of the 50 specimens tested, both assays agreed on 21 negative and 21 positive respiratory specimens. Discrepant results (8) agreed with specific PCR in 4 for FilmArray® and in 4 for Allplex™ (Table 1). The FilmArray® showed a 92.6% sensitivity and 91.3% specificity compared with the consensus and the dPCR assigned values.

**Conclusions:** The FilmArray® is a useful, easy-to-perform assay for detecting respiratory viruses in ICU patients. The Allplex™ requires additional RNA extraction time and more hands-on time, making it longer to perform. However, as the FilmArray® processes one sample at a time, this increases the time of successive results when several samples arrive to the laboratory with a short difference in arrival time, but this point is solved by new platforms available.

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**Evaluation of three different sample populations on a new multiplex BioPlex®2200 assay for the detection of measles, Mumps, and Varicella-Zoster virus IgM antibodies**

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**Background:** Measles, mumps, and varicella are three of the most highly infectious diseases. Worldwide outbreaks continue in many countries despite aggressive vaccination campaigns. Early diagnosis of these diseases improves patient management and helps prevent outbreaks from spreading. To assist clinicians in making quick and accurate diagnoses, Bio-Rad Laboratories is developing a new assay used for the identification of IgM class antibodies to measles, mumps, and varicella-zoster virus (VZV) in human serum or plasma. The new BioPlex 2200 MMV IgM assay produces three discrete results from a single multiplexed test reaction and is being developed to accommodate a wide variety of sample types to facilitate diverse testing situations.

**Methods:** Retrospective samples positive by Diasorin Liaison assays (measles n = 104, mumps n = 183, and VZV n = 64), a test ordered sample population comprised of samples from a European reference laboratory (measles n = 300 mumps n = 300, and VZV = 300), and samples from a healthy population made up of sam-

**Table 1** Discrepant results between FilmArray® Respiratory Panel and Allplex™ Respiratory Full Panel, and virus-specific RT-PCR results.

| Sample                  | FilmArray® respiratory panel | Allplex™ respiratory full panel | Specific RT-PCR |
|-------------------------|------------------------------|---------------------------------|-----------------|
| Nasal swab              | AdV                          | Negative                        | Negative       |
| Nasal swab              | Flu A 2009                   | Negative                        | Flu A 2009     |
| Nasal swab              | AdV                          | Negative                        | Negative       |
| Nasal swab              | Flu A 2009                   | Negative                        | Flu A 2009     |
| Nasal swab              | AdV                          | Negative                        | Negative       |
| Nasal swab              | Flu A 2009                   | Negative                        | Flu A 2009     |
| Nasal swab              | Negative                     | Flu B                           | Negative       |
| Nasal swab              | Negative                     | Flu B                           | Negative       |
| Sputum                  | Negative                     | Flu B                           | Negative       |
| Nasal swab              | Negative                     | Flu B                           | Negative       |
| Nasal swab              | Negative                     | Flu B                           | Negative       |
| BAL                     | Negative                     | AdV                             | AdV            |
| BAL                     | Negative                     | AdV                             | AdV            |
| BAL                     | Negative                     | AdV                             | AdV            |