Background. Timely bloodstream infection (BSI) pathogen identification requires robust sample purification and testing methods that can accommodate the wide variety of blood culture media used for growing positive blood culture (BPC) specimens. Sensitive molecular methods are needed for identification of all organisms present in BBD, especially polymicrobial cultures which can be difficult to identify with current methods of BD and BioMérieux blood culture media commonly used in hospital laboratories were used to evaluate the performance of a prototype BioFire FilmArray® Blood Culture Identification 2 (BCID2) Panel with BPCs.

Methods. Fungi (seven) and bacteria (19) were independently seeded in blood samples, inoculated into as many as eight different types of blood culture bottles, and incubated on the recommended instrument. Time to positivity (TTP) was recorded for all BPCs. Subsets of BPCs were enumerated and tested on the BioFire BCID2 Panel and BioFire FilmArray® Blood Culture Identification (BCID) panel. Polymicrobial testing was performed by seeding growing organisms and using the BD BACT/ALERT 3D or BioMérieux BACTEC using the recommended instrument. Fungi and bacteria were independently seeded and enumerated. The BioFire BCID2 Panel was compared with the BioFire BCID panel, the FDA approved BacT/ALERT and the Vitek MS system.

Results. Over 750 BPCs were enumerated, ~500 BPCs were tested on the BioFire BCID2, and over 200 were also tested on the BioFire BCID. 100% of seeded BPCs tested on the BioFire Panels resulted in correct pathogen identification. Across all bottle types, fungi grew to levels ranging from 8E+05 to 5E+07 CFU/mL, Gram-positive bacteria titers ranged from 9E+07 to 2E+09, and Gram-negative bacteria titers ranged from 9E+07 to 2E+09. Polymicrobial BPCs (30) had reduced titers of slow growing organisms when seeded with fast growing organisms but were detected by both BioFire BCID and BCID2 panels.

Conclusion. This study demonstrates that a prototype BioFire BCID2 Panel, and the BioFire BCID Panel, robustly detect and identify (100%) BSI pathogens over a multitude of common blood culture media and systems. Results confirm BPC (single and polymicrobial) titers are absent on the BioFire BCID2 panels. An expanded menu of targets (organism and resistance) and faster run time with the BioFire BCID2 Panel will offer a flexible and comprehensive aid in the diagnosis of BSIs. The BioFire® BCID2 Panel has not yet been evaluated by the FDA or other regulatory agencies for in vitro diagnostic use.

Disclosures. J. Green, BioFire Diagnostics, LLC: Employee, Salary. C. Carter, BioFire Diagnostics, LLC: Employee, Salary. C. Chandler, BioFire Diagnostics, LLC: Employee, Salary. A. Clark, BioFire Diagnostics, LLC: Employee, Salary. S. Thatcher, BioFire Diagnostics, LLC: Employee, Salary.