**Supplementary Table S10.** Formulas for Calculating Performance Metrics Per IMX-BVN-2 Bacterial Score Results Interpretation Bands

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Band** | **Adjudicated Infection Status\*** | **Sensitivity** | **Specificity** | **Nominal Likelihood Ratio (LR)** | **Sample** **Pre-Test Probability (aka Prevalence)** | **Sample Pre-Test Odds** | **Sample Post-Test Odds** | **Sample Post-Test Probability** |
| **Bact. Inf. Present**  | **Bact. Inf. Absent** |
| Very Likely |  $y\_{1}$ |  $x\_{1}$ | $$\frac{y\_{1}}{\sum\_{n=1}^{4}y\_{n}}$$ | $$\frac{x\_{2}+x\_{3}+x\_{4}}{\sum\_{n=1}^{4}x\_{n}}$$ | $$\frac{sensitivity}{1-specificity}$$ | $$\frac{\sum\_{n=1}^{4}y\_{n}}{\sum\_{n=1}^{4}y\_{n}+ \sum\_{n=1}^{4}x\_{n}}$$ | $$\frac{\sum\_{n=1}^{4}y\_{n}}{\sum\_{n=1}^{4}x\_{n}}$$ | $$LR× S. Pre-Test Odds$$ | $$\frac{S. Post-Test Odds}{1+S. Post-Test Odds} or \frac{y\_{1}}{y\_{1}+x\_{1}}$$ |
| Possible |  $y\_{2}$ |  $x\_{2}$ | $$\frac{y\_{2}}{\sum\_{n=1}^{4}y\_{n}}$$ | $$\frac{x\_{1}+x\_{3}+x\_{4}}{\sum\_{n=1}^{4}x\_{n}}$$ | $$\frac{sensitivity}{1-specificity}$$ | $$\frac{\sum\_{n=1}^{4}y\_{n}}{\sum\_{n=1}^{4}y\_{n}+ \sum\_{n=1}^{4}x\_{n}}$$ | $$\frac{\sum\_{n=1}^{4}y\_{n}}{\sum\_{n=1}^{4}x\_{n}}$$ | $$LR× S. Pre-Test Odds$$ | $$\frac{S. Post-Test Odds}{1+S. Post-Test Odds} or \frac{y\_{1}}{y\_{1}+x\_{1}}$$ |
| Unlikely |  $y\_{3}$ |  $x\_{3}$ | $$\frac{y\_{1}+y\_{2}+y\_{4}}{\sum\_{n=1}^{4}y\_{n}}$$ | $$\frac{x\_{3}}{\sum\_{n=1}^{4}x\_{n}}$$ | $$\frac{1-sensitivity}{specificity}$$ | $$\frac{\sum\_{n=1}^{4}y\_{n}}{\sum\_{n=1}^{4}y\_{n}+ \sum\_{n=1}^{4}x\_{n}}$$ | $$\frac{\sum\_{n=1}^{4}y\_{n}}{\sum\_{n=1}^{4}x\_{n}}$$ | $$LR× S. Pre-Test Odds$$ | $$\frac{S. Post-Test Odds}{1+S. Post-Test Odds} or \frac{y\_{1}}{y\_{1}+x\_{1}}$$ |
| Very Unlikely |  $y\_{4}$ |  $x\_{4}$ | $$\frac{y\_{1}+y\_{2}+y\_{3}}{\sum\_{n=1}^{4}y\_{n}}$$ | $$\frac{x\_{4}}{\sum\_{n=1}^{4}x\_{n}}$$ | $$\frac{1-sensitivity}{specificity}$$ | $$\frac{\sum\_{n=1}^{4}y\_{n}}{\sum\_{n=1}^{4}y\_{n}+ \sum\_{n=1}^{4}x\_{n}}$$ | $$\frac{\sum\_{n=1}^{4}y\_{n}}{\sum\_{n=1}^{4}x\_{n}}$$ | $$LR× S. Pre-Test Odds$$ | $$\frac{S. Post-Test Odds}{1+S. Post-Test Odds} or \frac{y\_{1}}{y\_{1}+x\_{1}}$$ |

\*This table of formulas is also applicable to the IMX-BVN-2 viral score, where the two infection statuses would be “Viral Infection Present” and “Viral Infection Absent.”
aka = also known as, Bact. = Bacterial, Inf. = Infection, S.=Sample