**Supplemental Digital Content 2: Characteristic of Patients with Bacteremia**

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| **Case** | **Age** | **Organism** | | **Penicillin**  **MIC** | | **Initial Antibiotic** | **Blood Culture Directed Changes in Management** | **Final**  **Antibiotic** |
| 1 | 10 yrs | *S. pneumoniae*  (serotype 19A) | | 0.125 | Ampicillin Erythromycin | | Changed to vancomycin after initial positive blood culture; Changed to cefotaxime after final blood culture result | Amoxicillin |
| 2 | 5 yrs | *S. aureus*  (methicillin-resistant) | | N/A | Ampicillin | | Added vancomycin after final blood culture result | Linezolid |
| 3 | 4 yrs | *S. pneumoniae*  (serotype 9N) | | 0.032 | Ampicillin-Sulbactam | | Discontinued vancomycin after final blood culture result | Ampicillin |
| 4 | 10 mo | *S. pneumoniae*  (serotype 3) | | 0.064 | Amoxicillin | | None | Amoxicillin |
| 5 | 1 yr | *S. pneumoniae*  (serotype 19A) | | 0.125 | Vancomycin Cefotaxime | | Vancomycin discontinued after organism sensitivity information became available | Clindamycin |
| 6 | 11 mo | *H. influenzae*  *(non-typable)* | | N/A | Vancomycin Ceftazidime | | Changed to ampicillin after final blood culture result | Amoxicillin |
| 7 | 6 yrs | *Staphylococcus*  *hominusa*  *Staphylococcus*  *epidermidisa* | | N/A | Ceftazidime | | None | Clindamycin |
| 8 | 3 yrs | *Staphylococcus*  *epidermidisa* | | N/A | Amoxicillin | | None | Amoxicillin |
| 9 | 2yrs | Coagulase negative  *Staphylococcus*\* | N/A | | Ampicillin | | Added Vancomycin after initial positive blood culture  Discontinued Vancomycin after final blood culture result | Amoxicillin |
| Abbreviations: MIC, minimum inhibitory concentration; N/A, not applicable  aDetermined to be contaminants | | | | | | | | |