Supplemental Table 1: Outcome definitions of CVAD complications

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| *CVAD-associated BSI (CLABSI):* | Minimum definition of laboratory-confirmed BSI that is not secondary to an infection at another body site, with a CVAD in place for more than two days on the date of event as defined by Centers of Disease Control and Prevention/ National Healthcare Safety Network (24). |
| *Catheter related BSIs (CRBSI):* | Catheters were in place more than 48 hours in addition to the CLABSI definition (12). |
| *CVAD-associated thrombosis:* | Development of partial or complete thrombosis (symptomatic or non-symptomatic) at the CVAD site diagnosed via ultrasound (19). |
| *Catheter removal due to suspected infection:* | Removal of catheter due to suspected catheter infection before confirming CRBSI/CLABSI status (25). |
| *Occlusion or blockage:* | Partial and full blockage of the CVAD lumen or lumens (irrespective of occlusion treatment); |
| *Dislodgment or migration*: | Partial, complete, and/or accidental removal resulting in the CVAD tip no longer situated in the inferior or superior vena cava (26); |
| *Breakage or rupture:* | A visible split in CVAD material diagnosed by leakage or radiographic evidence of extravasation from a portion of the CVAD into tissue (27); |
| *Local infection and phlebitis*: | Exit site, entrance, and tunnel infections and phlebitis (26). |