**Supplemental Table 1. Variable definitions for each catheter day**

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| **Variable** | **Definition for EMR abstraction** |
| ICU Level of Care |  |
| Cardiovascular | Any of the following criteria met on the catheter day:   1. Exposure to two consecutive daysa of any of: dopamine, IV epinephrine, norepinephrine, dobutamine, milrinone, IV treprostinil 2. Presence of or documentation of monitoring for any of the following: arterial catheter, pulmonary artery catheter, systemic arterial pressure monitoring, CVP monitoring |
| Respiratory | Any of the following criteria met on the catheter day:  Exposure to two consecutive daysa of high frequency ventilation, CPAP, BiPAP, mechanical ventilation, nitric oxide, surfactant therapy or ECMO |
| Renal replacement therapy | Exposure to hemodialysis, peritoneal dialysis, or aquapheresis on catheter day |
| Hematologic interventions | Exposure to leukocytapheresis or plasmapheresis on catheter day |
| Neurologic | Exposure to Intracranial pressure monitoring or Intracranial oxygen monitoring on catheter day |
| Age | The patient's age as of the catheter day, grouped as follows: < 1 year, 1-<5 years, 5-<10 years, 10-<15 years, 15-21 years |
| Race/ethnicity | The patient's race/ethnicity, grouped as follows: Non-Hispanic White, Non-Hispanic Black, Hispanic, Multi-Racial, Other |
| Non-English speaking | Patient has a non-English language listed as their preferred language\*\* |
| Sex | The legal/administrative sex of the patient (female/male) |
| Catheter type: Port | Patient had a port-a-cath present on this catheter day |
| Oncology department | Patient was on the Oncology service on this catheter day |
| Dwell time of current central catheter | The number of inpatient and outpatient days between the day of catheter placement and this catheter day for the central catheter that is in place. If the patient has multiple catheters present on this day, the catheter with the earliest date of placement is used |
| Cumulative inpatient catheter days as of this catheter day | The number of days the patient has had a central catheter during this inpatient hospitalization. Multiple central catheters present on the same day are counted as a single catheter day. Value may be less than "dwell time of current central catheter" if the patient has a central catheter in place that was present prior to inpatient hospitalization. Value may be more than “dwell time of current central catheter” if patient has required central catheters to be replaced during the hospitalization |
| Ostomy | Documented ostomy site assessment on this catheter day |
| Total parenteral nutrition (TPN)  use | Received TPN on this catheter day or the preceding catheter day |
| Behavioral health condition | Evidence of at least one of the following during this encounter, before this catheter day:  1) a behavioral health team consult or note in EMR, 2) a  behavioral health safety observation order (visual and arms length or visual observation) |
| Behavioral health safety observer | Evidence of a behavioral health safety observation order (visual and arms length or visual observation) during this encounter, before this catheter day (as a marker of a patient identified as being at risk for central catheter dislodgement, loss of dressing integrity, and/or infection risk) |
| Lymphatic condition | Active lymphatic diagnosis (excluding localized lymphedema and localized lymphatic leak) on their problem list at this visit |
| Neutropenia | Patient had an ANC value below 500 within 3 days before catheter day |
| Hospital length of stay | Number of days between day of admission and catheter day |

aTwo consecutive days of measurement were used to define exposure to cardiovascular medications or respiratory therapies, thus excluding brief exposure to these interventions during operative procedures from being counted as ICU level of care

\*\*This refers to the patient’s preferred language; in cases where the patient is unable to express a language preference, the primary caregiver’s language is listed

**Supplemental Table 2. Covariates and risk factors in catheter days with and without CLABSI**

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| **Characteristic** | **Overall, N = 520,209a** | **CLABSI line days, N = 796a** | **Non-CLABSI line days, N = 519,413** |
| Age in years, Median (IQR) | 1.7 (0.3, 9.3) | 0.8 (0.2, 4.6) | 1.7 (0.3, 9.3) |
| Age Group, n (%) |  |  |  |
| <1yr | 229,075 (44%) | 427 (54%) | 228,648 (44%) |
| 1-<5yrs | 107,666 (21%) | 181 (23%) | 107,485 (21%) |
| 5-<10yrs | 61,533 (12%) | 52 (6.5%) | 61,481 (12%) |
| 10-<15yrs | 57,097 (11%) | 49 (6.2%) | 57,048 (11%) |
| 15-<21yrs | 64,838 (12%) | 87 (11%) | 64,751 (12%) |
| Race/ethnicity, n (%) |  |  |  |
| Non-Hispanic White | 225,966 (43%) | 311 (39%) | 225,655 (43%) |
| Asian | 20,124 (3.9%) | 22 (2.8%) | 20,102 (3.9%) |
| Hispanic or Latino | 87,404 (17%) | 141 (18%) | 87,263 (17%) |
| Multi-Racial | 17,537 (3.4%) | 22 (2.8%) | 17,515 (3.4%) |
| Non-Hispanic Black | 103,405 (20%) | 172 (22%) | 103,233 (20%) |
| Other/Native Am Ind/Hawaiian | 65,773 (13%) | 128 (16%) | 65,645 (13%) |
| English not primary language, n (%) | 60,815 (12%) | 114 (14%) | 60,701 (12%) |
| Male sex, n (%) | 281,967 (54%) | 416 (52%) | 281,551 (54%) |
| ICU-level of care: Cardiovascular, n (%) | 110,924 (21%) | 230 (29%) | 110,694 (21%) |
| ICU-level of care: Respiratory, n (%) | 201,711 (39%) | 401 (50%) | 201,310 (39%) |
| ICU-level of care: Renal replacement therapy, n (%) | 3,996 (0.8%) | 5 (0.6%) | 3,991 (0.8%) |
| ICU-level of care: Hematologic interventions, n (%) | 1,601 (0.3%) | 1 (0.1%) | 1,600 (0.3%) |
| ICU-level of care: Neurologic, n (%) | 3,095 (0.6%) | 1 (0.1%) | 3,094 (0.6%) |
| Number of organs requiring ICU-level of care, n (%) |  |  |  |
| 0 | 286,826 (55%) | 342 (43%) | 286,484 (55%) |
| 1 | 147,567 (28%) | 272 (34%) | 147,295 (28%) |
| 2 | 83,703 (16%) | 180 (23%) | 83,523 (16%) |
| 3 | 2,098 (0.4%) | 2 (0.3%) | 2,096 (0.4%) |
| 4 | 15 (<0.1%) | 0 (0%) | 15 (<0.1%) |
| Any organ system requiring ICU-level of care, n (%) | 233,383 (45%) | 454 (57%) | 232,929 (45%) |
| Consecutive days requiring ICU-level of care, Median (IQR) | 0 (0, 11) | 4 (0, 34) | 0 (0, 11) |
| Total days requiring ICU-level of care, Median (IQR) | 4 (0, 24) | 15 (0, 61) | 4 (0, 24) |
| Catheter type: Port, n (%) | 97,974 (19%) | 77 (9.7%) | 97,897 (19%) |
| Oncology department, n (%) | 116,042 (22%) | 136 (17%) | 115,906 (22%) |
| Dwell time of current central catheter, Median (IQR)b | 20 (6, 63) | 27 (11, 71) | 20 (6, 63) |
| Cumulative inpatient catheter days, Median (IQR)b | 16 (5, 45) | 32 (13, 91) | 16 (5, 45) |
| Ostomy, n (%) | 36,206 (7.0%) | 63 (7.9%) | 36,143 (7.0%) |
| TPN use, n (%) | 251,653 (48%) | 473 (59%) | 251,180 (48%) |
| Behavioral health condition, n (%) | 123,900 (24%) | 260 (33%) | 123,640 (24%) |
| Behavioral health safety observer, n (%) | 8,539 (1.6%) | 19 (2.4%) | 8,520 (1.6%) |
| Lymphatic, n (%) | 17,374 (3.3%) | 73 (9.2%) | 17,301 (3.3%) |
| Neutropenia, n (%) | 51,576 (9.9%) | 86 (11%) | 51,490 (9.9%) |
| Hospital length of stay, Median (IQR) | 20 (8, 55) | 38 (16, 104) | 20 (8, 55) |
|  | | | |

aCatheter days in the 14 day window post-CLABSI were excluded from overall catheter days and from CLABSI catheter days, in alignment with the NHSN repeat infection timeframe (RIT) rule that these catheter days are not eligible for a new infection

bFor each group, dwell time and cumulative inpatient catheter days were calculated for each catheter day included in the group and summed, to calculate the median and IQR values