SUPPLEMENTARY TABLE 1. Pre-HCT demographic and clinical characteristics of study cohort, stratified by TRM score quartile

|                                | 1<sup>st</sup> quartile (n=215) | 2<sup>nd</sup> quartile (n=215) | 3<sup>rd</sup> quartile (n=216) | 4<sup>th</sup> quartile (n=215) | P-value |
|--------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|---------|
| Median age at HCT (range), years | 38.5 (18.2-77.8)                 | 51.3 (18.7-75.7)                 | 57.9 (18.1-76.4)                 | 63.5 (28.3-79.5)                 | <0.001  |
| Male gender, n (%)              | 109 (51)                         | 111 (52)                         | 116 (54)                         | 128 (60)                         | 0.24    |
| Cytogenetic risk, n (%)         |                                  |                                  |                                  |                                  | 0.67    |
| Favorable/intermediate          | 163 (76)                         | 151 (70)                         | 151 (70)                         | 148 (68)                         |         |
| Adverse                        | 43 (20)                          | 57 (27)                          | 55 (25)                          | 58 (27)                          |         |
| Missing                        | 9 (4)                            | 7 (3)                            | 10 (5)                           | 9 (4)                            |         |
| Secondary AML, n (%)            | 25 (12)                          | 35 (16)                          | 58 (27)                          | 116 (53)                         | <0.001  |
| Disease status at HCT, n (%)    |                                  |                                  |                                  |                                  | 0.47    |
| First remission                | 161 (75)                         | 167 (78)                         | 169 (78)                         | 156 (73)                         |         |
| Second remission               | 54 (25)                          | 48 (22)                          | 47 (22)                          | 59 (27)                          |         |
| Pre-HCT MRD status, n (%)       |                                  |                                  |                                  |                                  | 0.0025  |
| MRD<sup>neg</sup>              | 185 (86)                         | 177 (82)                         | 175 (81)                         | 153 (72)                         |         |
| MRD<sup>pos</sup>              | 30 (14)                          | 38 (18)                          | 41 (19)                          | 62 (28)                          |         |
| Cytogenetics before HCT, n (%)  |                                  |                                  |                                  |                                  | <0.001  |
| Normalized karyotype           | 110 (51)                         | 82 (38)                          | 85 (39)                          | 66 (31)                          |         |
| Abnormal karyotype             | 15 (7)                           | 26 (12)                          | 41 (19)                          | 53 (25)                          |         |
| Non-informative karyotype*     | 84 (39)                          | 98 (46)                          | 84 (38)                          | 84 (39)                          |         |
| Missing                        | 6 (3)                            | 9 (4)                            | 8 (4)                            | 12 (6)                           |         |
| Recovered ANC before HCT**, n (%) | 215 (100)                       | 206 (96)                         | 201 (93)                         | 178 (83)                         | <0.001  |
| Recovered platelet count before HCT**, n (%) | 206 (96)                       | 181 (84)                         | 149 (69)                         | 87 (40)                          | <0.001  |
| Recovered peripheral blood counts before HCT**, n (%) | 206 (96)                       | 179 (83)                         | 148 (69)                         | 84 (39)                          | <0.001  |
| ECOG performance status, n (%) |                                  |                                  |                                  |                                  | <0.001  |
| 0                              | 100 (47)                         | 40 (19)                          | 11 (5)                           | 1 (0)                            |         |
| 1                              | 113 (53)                         | 173 (80)                         | 197 (91)                         | 163 (76)                         |         |
| 2-3                            | 2 (1)                            | 2 (1)                            | 8 (4)                            | 51 (24)                          |         |
| HCT-CI/Age Composite score, n (%) |                                  |                                  |                                  |                                  | <0.001  |
| 0                              | 22 (10)                          | 3 (1)                            | 2 (1)                            | 0 (0)                            |         |
| 1-2                            | 81 (38)                          | 78 (36)                          | 61 (28)                          | 43 (20)                          |         |
| 3-4                            | 80 (37)                          | 75 (35)                          | 78 (36)                          | 80 (37)                          |         |
| ≥5                             | 32 (15)                          | 59 (27)                          | 75 (35)                          | 92 (43)                          |         |
| Median PAM score (range)        |                                  |                                  |                                  |                                  | <0.001  |
| <17, n (%)                     | 139 (65)                         | 135 (63)                         | 95 (44)                          | 80 (37)                          |         |
| 17-23, n (%)                   | 52 (24)                          | 61 (28)                          | 82 (38)                          | 79 (37)                          |         |
| 24-30, n (%)                   | 8 (4)                            | 11 (5)                           | 21 (10)                          | 32 (15)                          |         |
| >30, n (%)                     | 1 (0)                            | 1 (0)                            | 6 (3)                            | 9 (4)                            |         |
| Missing                        | 15 (7)                           | 7 (3)                            | 12 (6)                           | 15 (7)                           |         |
| Modified EBMT score, n (%) | 0-1 | 2  | 3  | >4  | Not applicable | <0.001 |
|--------------------------|-----|----|----|-----|---------------|-------|
| 20 (9)                   | 6 (3)| 4 (2)| 0 (0) |     |               |       |
| 59 (27)                  | 47 (22)| 29 (13)| 31 (14)|     |               |       |
| 66 (31)                  | 93 (43)| 96 (44)| 86 (40)|     |               |       |
| 21 (10)                  | 30 (14)| 55 (25)| 67 (31)|     |               |       |
| 49 (23)                  | 39 (18)| 32 (15)| 31 (14)|     |               |       |

| Pre-HCT laboratory studies | WBC (range), x10^3/µL | Platelet count (range), x10^3/µL | Creatinine (mg/dL) | Albumin (g/L) |
|---------------------------|-----------------------|-------------------------------|-------------------|---------------|
|                           | 4.7 (0.5-14.3)       | 181 (33-721)                | 0.80 (0.40-1.74) | 3.9 (3.2-5.1) |
|                           | 4.1 (0.2-24.8)       | 138 (19-305)                | 0.83 (0.45-1.66) | 3.9 (3.0-4.7) |
|                           | 3.7 (0.1-11.5)       | 102 (5-273)                 | 0.91 (0.43-1.85) | 3.8 (2.5-4.7) |
|                           | 2.7 (0.0-16.4)       | 56 (8-232)                  | 0.96 (0.42-2.08) | 3.7 (1.9-4.8) |

| Conditioning intensity | MAC | Non-MAC | <0.001 |
|------------------------|-----|---------|-------|
| 183 (85)               | 158 (73) | 123 (57) | 80 (37) |
| 32 (15)                | 57 (27) | 93 (43) | 135 (63) |

| Unrelated donor, n (%) | 154 (72) | 151 (70) | 164 (76) | 149 (69) | 0.43 |
|------------------------|---------|---------|---------|---------|------|
| 10/10 HLA-identical related donor | 54 (25) | 53 (25) | 49 (23) | 55 (26) | 0.037 |
| 10/10 HLA-matched unrelated donor | 98 (46) | 93 (43) | 111 (51) | 107 (50) |       |
| 1-2 allele/antigen HLA-mismatched unrelated donor | 14 (7) | 30 (13) | 24 (11) | 22 (10) |       |
| HLA-haploidentical donor | 5 (2) | 8 (4) | 3 (1) | 10 (5) |       |
| UCB | 44 (20) | 31 (14) | 29 (13) | 21 (10) |       |

| Source of stem cells, n (%) | PB | BM | UCB | <0.001 |
|-----------------------------|----|----|-----|-------|
| 142 (66)                    | 163 (76) | 172 (80) | 185 (86) |
| 29 (13)                     | 21 (10) | 15 (7) | 9 (4) |
| 44 (20)                     | 31 (14) | 29 (13) | 21 (10) |

| GVHD prophylaxis, n (%) | CNI + MMF ± sirolimus | CNI + MTX ± other | PTCy | Other | <0.001 |
|-------------------------|----------------------|-------------------|------|-------|-------|
| 79 (37)                 | 89 (41)              | 118 (55)          | 142 (66) |       |
| 107 (50)                | 94 (44)              | 80 (37)           | 50 (23) |       |
| 24 (11)                 | 26 (12)              | 16 (7)            | 23 (11) |       |
| 5 (2)                   | 6 (3)                | 2 (1)             | 0 (0) |       |

| Transplant year, n (%) | 2006-2012 | 2013-2019 |
|------------------------|-----------|----------|
| 115 (53)               | 108 (50)  | 86 (40)  | 88 (41) | 0.012 |
| 100 (47)               | 107 (50)  | 130 (60) | 127 (59) |       |

*Normal cytogenetics in patient with cytogenetically normal AML or missing cytogenetics at diagnosis. **ANC ≥1,000/µL and platelets ≥100,000/µL. Abbreviations: BM, bone marrow; CNI, calcineurin inhibitor; EBMT, European Bone and Marrow Transplantation; ECOG, Eastern Cooperative Oncology Group; HCT, hematopoietic cell transplantation; MAC, myeloablative conditioning; MMF, mycophenolate mofetil; MTX, methotrexate; PB, peripheral blood; PTCy, post transplantation cyclophosphamide; TBI, total body irradiation; UCB, umbilical cord blood; WBC, total white blood cell count.
SUPPLEMENTARY FIGURE LEGENDS

Supplementary Figure 1
Post-HCT outcomes for 861 adults with AML undergoing allogeneic HCT while in first or second morphologic remission, shown separately for patients undergoing MAC HCT (A-D) and non-MAC HCT (E-H). (A,E) Risk of non-relapse mortality, (B,F) time to relapse, (C,G) relapse-free survival, and (D,H) overall survival.

Supplementary Figure 2
Post-HCT outcomes for 812 adults with AML undergoing allogeneic HCT while in first or second morphologic remission, stratified by PAM score. (A) Risk of non-relapse mortality, (B) time to relapse, (C) relapse-free survival, and (D) overall survival, shown for the entire study cohort.

Supplementary Figure 3
Post-HCT outcomes for 861 adults with AML undergoing allogeneic HCT while in first or second morphologic remission, stratified by HCT-CI/age composite score. (A) Risk of non-relapse mortality, (B) time to relapse, (C) relapse-free survival, and (D) overall survival, shown for the entire study cohort.
