**Age-updated mortality risks in adolescents and youth aged 10-24 years living with HIV: comparisons between perinatally acquired versus non-perinatally acquired HIV in the global IeDEA consortium**

**Supplemental Digital Content 1**

Sophie Desmonde, PhD, *et al.*

This Appendix provides results in addition to those presented in the main manuscript.

Key results are presented in the main manuscript. In addition, Supplemental Tables A-F report number of events, persont-time and incidence rates for mortality overall, by region and by sex for both adolescents and youth living with perinatally and non-perinatally acquire HIV. These results are graphically depicted in manuscript Figures 1 and 2.

**Table A. Mortality distribution among adolescents and youth aged 10-24 years living with perinatally-acquired HIV and on ART, during follow-up, by time-updated age, sex and region in the IeDEA global consortium**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Female** | | | | **Male** | | | |
| **Time-varying age** | **10-14 years** | **15-19 years** | **20-24 years** | **Overall** | **10-14 years** | **15-19 years** | **20-24 years** | **Overall** |
| **OVERALL** | 202 | 41 | 6 | 249 | 188 | 42 | 1 | 231 |
|  |  |  |  |  |  |  |  |  |
| **Asia-Pacific** | 21 | 8 | 1 | 30 | 12 | 7 | 0 | 19 |
| **CCASANET** | 13 | 6 | 4 | 23 | 11 | 4 | 0 | 15 |
|  |  |  |  |  |  |  |  |  |
| **Central Africa** | 2 | 0 | 0 | 2 | 6 | 3 | 0 | 9 |
| **East Africa** | 34 | 1 | 0 | 35 | 48 | 4 | 0 | 52 |
| **South Africa** | 78 | 17 | 0 | 95 | 78 | 12 | 1 | 91 |
| **West Africa** | 54 | 9 | 1 | 64 | 33 | 12 | 0 | 45 |

**Table B. Person-time (years) among adolescents and youth aged 10-24 years living with perinatally-acquired HIV and on ART, during follow-up, by time-updated age, sex and region in the IeDEA global consortium**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Female** | | | | **Male** | | | |
| **Time-varying age** | **10-14 years** | **15-19 years** | **20-24 years** | **Overall** | **10-14 years** | **15-19 years** | **20-24 years** | **Overall** |
| **OVERALL** | 28434 | 5081 | 154 | 33669 | 28980 | 4954 | 134 | 34068 |
|  |  |  |  |  |  |  |  |  |
| **Asia-Pacific** | 3564 | 1052 | 38 | 4654 | 3251 | 892 | 35 | 4177 |
| **CCASANET** | 1375 | 525 | 74 | 1975 | 1185 | 428 | 59 | 1673 |
|  |  |  |  |  |  |  |  |  |
| **Central Africa** | 1424 | 331 | 1 | 1756 | 1391 | 268 | 3 | 1662 |
| **East Africa** | 4196 | 457 | 1 | 4654 | 4031 | 449 | 2 | 4482 |
| **South Africa** | 15448 | 2364 | 31 | 17843 | 16364 | 2455 | 25 | 18843 |
| **West Africa** | 2426 | 353 | 8 | 2788 | 2759 | 461 | 11 | 3232 |

**Table C. Mortality rates among adolescents and youth aged 10-24 years living with perinatally-acquired HIV and on ART, during follow-up, by time-updated age, sex and region in the IeDEA global consortium**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Female** | | | | **Male** | | | |
|  | **10-14 years** | **15-19 years** | **20-24 years** | **OVERALL** | **10--14 years** | **15-19 years** | **20-24 years** | **OVERALL** |
| **OVERALL** | **0.7** | **0.8** | **3.9** | **0.7** | **0.7** | **0.9** | **0.7** | **0.7** |
|  | [0.6-0.8] | [0.6-1.1] | [1.7-8.7] | [0.7-0.8] | [0.6-0.7] | [0.6-1.1] | [0.1-5.3] | [0.6-0.8] |
| **Asia-Pacific** | 0.6 | 0.8 | 2.6 | 0.6 | 0.4 | 0.8 | 0.0 | 0.5 |
|  | [0.4-0.9] | [0.4-1.5] | [0.4-18.5] | [0.5-0.9] | [0.2-0.7] | [0.4-1.6] |  | [0.3-0.7] |
| **CCASANET** | 1.0 | 1.1 | 5.4 | 1.2 | 0.9 | 0.9 | 0.0 | 0.9 |
|  | [0.5-1.6] | [0.5-2.5] | [2-14.4] | [0.8-1.8] | [0.5-1.7] | [0.4-2.5] |  | [0.5-1.5] |
| **Central Africa** | 0.1 | 0.0 | 0.00 | 0.1 | 0.4 | 1.1 | 0.0 | 0.5 |
|  | [0.0-0.6] |  |  | [0.0-0.5] | [0.2-1] | [0.4-3.5] |  | [0.3-1.0] |
| **East Africa** | 0.8 | 0.2 | 0.00 | 0.8 | 1.2 | 0.9 | 0.0 | 1.2 |
|  | [0.6-1.1] | [0-1.6] |  | [0.5-1.0] | [0.9-1.6] | [0.3-2.4] |  | [0.9-1.5] |
| **South Africa** | 0.5 | 0.7 | 0.00 | 0.5 | 0.5 | 0.5 | 4.1 | 0.5 |
|  | [0.4-0.6] | [0.4-1.2] |  | [0.4-0.7] | [0.4-0.6] | [0.3-0.9] | [0.6-28.8] | [0.4-0.6] |
| **West Africa** | 2.2 | 2.6 | 12.4 | 2.3 | 1.2 | 2.6 | 0.0 | 1.4 |
|  | [1.7-2.9] | [1.3-4.9] | [1.7-88.0] | [1.8-2.9] | [0.9-1.7] | [1.5-4.6] |  | [1.0-1.9] |

**Table D. Mortality distribution among adolescents and youth aged 10-24 years living with non perinatally-acquired HIV and on ART, during follow-up, by time-updated age, sex and region in the IeDEA global consortium**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Female** | | | | **Male** | | | |
| **Time-varying age** | **10-14 years** | **15-19 years** | **20-24 years** | **Overall** | **10-14 years** | **15-19 years** | **20-24 years** | **Overall** |
| **OVERALL** | 274 | 525 | 1712 | 2511 | 246 | 348 | 498 | 1092 |
|  |  |  |  |  |  |  |  |  |
| **Asia-Pacific** | 12 | 9 | 1 | 22 | 11 | 8 | 2 | 21 |
| **CCASANET** | 10 | 14 | 15 | 39 | 11 | 16 | 16 | 43 |
|  |  |  |  |  |  |  |  |  |
| **Central Africa** | 17 | 15 | 24 | 56 | 18 | 15 | 8 | 41 |
| **East Africa** | 42 | 85 | 379 | 506 | 33 | 55 | 115 | 203 |
| **South Africa** | 147 | 355 | 1204 | 1706 | 134 | 222 | 342 | 698 |
| **West Africa** | 46 | 47 | 89 | 182 | 39 | 32 | 15 | 86 |

**Table E. Person-time (years) among adolescents and youth aged 10-24 years living with non perinatally-acquired HIV and on ART, during follow-up, by time-updated age, sex and region in the IeDEA global consortium**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Female** | | | | **Male** | | | |
| **PERSON - TIME (years)** | **10--14 years** | **15-19 years** | **20-24 years** | **OVERALL** | **10--14 years** | **15-19 years** | **20-24 years** | **OVERALL** |
| **OVERALL** | 20262 | 24731 | 79019 | 124012 | 10888 | 15542 | 14348 | 40778 |
|  |  |  |  |  |  |  |  |  |
| **Asia-Pacific** | 543 | 659 | 108 | 1310 | 481 | 459 | 85 | 1025 |
| **CCASANET** | 182 | 455 | 701 | 1339 | 156 | 371 | 1087 | 1614 |
|  |  |  |  |  |  |  |  |  |
| **Central Africa** | 590 | 1304 | 2705 | 4598 | 529 | 1039 | 738 | 2306 |
| **East Africa** | 1713 | 3860 | 15609 | 21182 | 1587 | 2238 | 2227 | 6052 |
| **South Africa** | 15968 | 17539 | 56774 | 90281 | 7539 | 10777 | 9825 | 28140 |
| **West Africa** | 1266 | 915 | 3121 | 5302 | 595 | 657 | 387 | 1639 |

**Table F. Mortality rates among adolescents and youth aged 10-24 years living with non perinatally-acquired HIV and on ART, during follow-up, by time-updated age, sex and region in the IeDEA global consortium**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Female** | | | | **Male** | | | |
|  | **10--14 years** | **15-19 years** | **20-24 years** | **OVERALL** | **10--14 years** | **15-19 years** | **20-24 years** | **OVERALL** |
| **OVERALL** | **1.4** | **2.1** | **2.2** | **2.0** | **2.2** | **2.2** | **3.1** | **2.6** |
|  | **[1.2-1.5]** | **[1.9-2.3]** | **[2.1-2.3]** | **[1.9-2.1]** | **[2.0-2.5]** | **[2.0-2.4]** | **[2.9-3.4]** | **[2.4-2.7]** |
| **Asia-Pacific** | 2.2 | 1.4 | 0.9 | 1.7 | 7.1 | 4.3 | 1.5 | 2.7 |
|  | [1.3-3.9] | [0.7-2.6] | [0.1-6.6] | [1.1-2.5] | [3.9-12.7] | [2.6-7.0] | [0.9-2.4] | [2.0-3.6] |
| **CCASANET** | 5.5 | 3.1 | 2.1 | 2.9 | 1.8 | 2.1 | 3.5 | 2.5 |
|  | [3.0-10.2] | [1.8-5.2] | [1.3-3.5] | [2.1-4.0] | [1.5-2.1] | [1.8-2.3] | [3.1-3.9] | [2.3-2.7] |
| **Central Africa** | 2.9 | 1.2 | 0.9 | 1.2 | 2.1 | 2.5 | 5.2 | 3.4 |
|  | [1.8-4.6] | [0.7-1.9] | [0.6-1.3] | [0.9-1.6] | [1.5-2.9] | [1.9-3.2] | [4.3-6.2] | [2.9-3.8] |
| **East Africa** | 2.5 | 2.2 | 2.4 | 2.4 | 6.6 | 4.9 | 3.9 | 5.3 |
|  | [1.8-3.3] | [1.8-2.7] | [2.2-2.7] | [2.2-2.6] | [4.8-9.0] | [3.4-6.9] | [2.3-6.4] | [4.2-6.5] |
| **South Africa** | 0.9 | 2.0 | 2.1 | 1.9 | 2.2 | 1.4 | 0.9 | 1.7 |
|  | [0.8-1.1] | [1.8-2.2] | [2.0-2.2] | [1.8-2.0] | [1.3-3.9] | [0.7-2.6] | [0.1-6.6] | [1.1-2.5] |
| **West Africa** | 3.6 | 5.1 | 2.9 | 3.4 | 2.9 | 1.2 | 0.9 | 1.2 |
|  | [2.7-4.9] | [3.9-6.8] | [2.3-3.5] | [3.0-4.0] | [1.8-4.6] | [0.7-1.9] | [0.6-1.3] | [0.9-1.6] |

**Table G. Mortality incidence rates (per 100 Person-Years) among adolescents and youth aged 15-24 years living HIV and on antiretroviral therapy during follow-up, by region and time-updated age, in the IeDEA global consortium. Sensitivity analysis, where perinatal infection is defined as enrolment in care < 15 years.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Adolescents and youth living with perinatally-acquired HIV | | | Adolescents and youth living with perinatally-acquired HIV | | |
| **INCIDENCE** | **15-19 years** | **20-24 years** | **OVERALL** | **15-19 years** | **20-24 years** | **OVERALL** |
| **OVERALL** | **1.4** | **1.6** | **1.4** | **2.8** | **2.4** | **2.5** |
|  | **[1.3-1.5]** | **[1.2-2.1]** | **[1.3-1.6]** | **[2.6-3.1]** | **[2.3-2.5]** | **[2.4-2.6]** |
| **Asia-Pacific** | 1.1 | 1.2 | 1.1 | 0.0 | 3.9 | 1.3 |
|  | [0.8-1.5] | [0.4-3.9] | [0.8-1.5] | - | [0.5-27.4] | [0.2-8.9] |
| **CCASANET** | 2.1 | 1.8 | 2.1 | 2.9 | 1.8 | 2.0 |
|  | [1.5-3] | [0.8-4.4] | [1.5-2.9] | [1.5-5.6] | [1.3-2.6] | [1.5-2.7] |
| **Central Africa** | 1.0 | 0.8 | 1.0 | 1.4 | 0.9 | 1.0 |
|  | [0.7-1.5] | [0.3-2.6] | [0.7-1.5] | [0.8-2.7] | [0.7-1.4] | [0.8-1.4] |
| **East Africa** | 1.2 | 2.4 | 1.3 | 3.4 | 2.8 | 2.9 |
|  | [0.9-1.6] | [1.2-4.5] | [1-1.7] | [2.8-4.2] | [2.5-3.0] | [2.6-3.1] |
| **South Africa** | 1.3 | 1.5 | 1.3 | 2.6 | 2.3 | 2.4 |
|  | [1.2-1.5] | [1.1-2.2] | [1.2-1.5] | [2.4-2.9] | [2.2-2.5] | [2.3-2.5] |
| **West Africa** | 3.5 | 2.9 | 3.4 | 6.6 | 3.0 | 3.5 |
|  | [2.7-4.4] | [1.1-7.8] | [2.7-4.4] | [4.8-9.1] | [2.5-3.6] | [2.9-4.1] |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Female** | | | | **Male** | | | |
|  | **Deaths** | **Person-time** | **IR** | **95%CI** | **Deaths** | **Person-time** | **IR** | **95%CI** |
| **OVERALL** | **262** | **18913** | **1.4** | **[1.2-1.6]** | **253** | **17284** | **1.5** | **[1.3-1.7]** |
|  |  |  |  |  |  |  |  |  |
| **15 - 19 years** |  |  |  |  |  |  |  |  |
| **Asia-Pacific** | 17 | 1673 | 1.02 | [0.6-1.6] | 15 | 1336 | 1.12 | [0.7-1.9] |
| **CCASANET** | 15 | 807 | 1.86 | [1.1-3.1] | 16 | 664 | 2.41 | [1.5-3.9] |
| **Central Africa** | 10 | 159 | 0.84 | [0.5-1.6] | 13 | 1060 | 1.23 | [0.7-2.1] |
| **East Africa** | 25 | 202 | 1.12 | [0.8-1.7] | 25 | 2002 | 1.25 | [0.8-1.8] |
| **South Africa** | 132 | 1095 | 1.27 | [1.1-1.5] | 128 | 9634 | 1.33 | [1.1-1.6] |
| **West Africa** | 29 | 73 | 3.38 | [2.3-4.9] | 35 | 981 | 3.57 | [2.6-5.0] |
|  |  |  |  |  |  |  |  |  |
| **20-24 years** |  |  |  |  |  |  |  |  |
| **Asia-Pacific** | 2 | 129 | 1.55 | [0.4-6.2] | 1 | 111 | 0.90 | [0.1-6.4] |
| **CCASANET** | 4 | 151 | 2.66 | [1.0-7.1] | 1 | 125 | 0.80 | [0.1-5.7] |
| **Central Africa** | 1 | 159 | 0.63 | [0.1-4.5] | 2 | 197 | 1.01 | [0.3-4.1] |
| **East Africa** | 5 | 202 | 2.48 | [1.0-5.9] | 4 | 179 | 2.23 | [0.8-6.0] |
| **South Africa** | 20 | 1095 | 1.83 | [1.2-2.8] | 11 | 932 | 1.18 | [0.7-2.1] |
| **West Africa** | 2 | 73 | 2.76 | [0.7-11] | 2 | 64 | 3.11 | [0.8-12.4] |

**Table H. Mortality rates among adolescents and youth aged 10-24 years living with perinatally-acquired HIV and on ART, during follow-up, by time-updated age, sex and region in the IeDEA global consortium. Sensitivity analysis, where perinatal infection is defined as enrolment in care < 15 years.**

**Table I. Mortality rates among adolescents and youth aged 10-24 years living with non perinatally-acquired HIV and on ART, during follow-up, by time-updated age, sex and region in the IeDEA global consortium. Sensitivity analysis, where perinatal infection is defined as enrolment in care < 15 years.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Female** | | | | **Male** | | | |
|  | **Deaths** | **Person-time** | **IR** | **95%CI** | **Deaths** | **Person-time** | **IR** | **95%CI** |
| **OVERALL** | **2022** | **90073** | **2.2** | **[2.1-2.3]** | **636** | **17694** | **3.6** | **[3.3-3.9]** |
|  |  |  |  |  |  |  |  |  |
| **15 - 19 years** |  |  |  |  |  |  |  |  |
| **Asia-Pacific** | 0 | 38 | 0.00 | - | 0 | 16 | 0.00 | - |
| **CCASANET** | 5 | 174 | 2.88 | [1.2-6.9] | 4 | 136 | 2.94 | [1.1-7.8] |
| **Central Africa** | 5 | 450 | 1.11 | [0.5-2.7] | 5 | 248 | 2.02 | [0.8-4.8] |
| **East Africa** | 61 | 2089 | 2.92 | [2.3-3.8] | 34 | 686 | 4.96 | [3.5-6.9] |
| **South Africa** | 240 | 9547 | 2.51 | [2.2-2.9] | 106 | 3598 | 2.95 | [2.4-3.6] |
| **West Africa** | 27 | 410 | 6.59 | [4.5-9.6] | 9 | 137 | 6.58 | [3.4-12.7] |
|  |  |  |  |  |  |  |  |  |
| **20-24 years** |  |  |  |  |  |  |  |  |
| **Asia-Pacific** | 0 | 18 | 0.00 | - | 1 | 8 | 11.99 | [1.7-85.1] |
| **CCASANET** | 15 | 625 | 2.40 | [1.4-4.0] | 15 | 1021 | 1.47 | [0.9-2.4] |
| **Central Africa** | 23 | 2546 | 0.90 | [0.6-1.4] | 6 | 544 | 1.10 | [0.5-2.5] |
| **East Africa** | 374 | 15409 | 2.43 | [2.2-2.7] | 111 | 2050 | 5.42 | [4.5-6.5] |
| **South Africa** | 1184 | 55710 | 2.13 | [2.0-2.2] | 332 | 8918 | 3.72 | [3.3-4.1] |
| **West Africa** | 88 | 3057 | 2.88 | [2.3-3.5] | 13 | 334 | 3.89 | [2.3-6.7] |