Supplement

Supplementary Table 1. Distribution of haemoglobin concentration and anaemia prevalence among children under the age of 5 years in sub-Saharan Africa[[1]](#footnote-1)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Country** | **Year** | **N** | **Haemoglobin**  **Mean (SD)** | **Anaemia**  **Prevalence** | **Moderate to severe anaemia**  **prevalence** |  |
| Angola | 2006 | 1,191 | 108 (15) | 54 | 27 |  |
|  | 2011 | 2,888 | 107 (14) | 53 | 26 |  |
|  | 2015 | 5,597 | 104 (14) | 65 | 34 |  |
| Benin | 2001 | 2,314 | 95 (19) | 79 | 58 |  |
|  | 2011 | 3,299 | 105 (16) | 59 | 32 |  |
|  | 2017 | 5,603 | 101 (15) | 72 | 44 |  |
| Burkina Faso | 2003 | 2,896 | 89 (18) | 91 | 73 |  |
|  | 2010 | 5,928 | 90 (17) | 88 | 70 |  |
|  | 2014 | 5,504 | 90 (17) | 88 | 70 |  |
|  | 2016 | 5,422 | 104 (16) | 59 | 34 |  |
|  | 2017 | 5,179 | 99 (16) | 75 | 50 |  |
|  | 2018 | 3,986 | 105 (16) | 58 | 32 |  |
| Burundi | 2010 | 3,080 | 110 (14) | 43 | 20 |  |
| Cameroon | 2004 | 3,287 | 102 (18) | 67 | 44 |  |
|  | 2011 | 4,557 | 105 (15) | 62 | 34 |  |
| Congo, DR | 2007 | 3,150 | 100 (17) | 70 | 45 |  |
|  | 2013 | 7,315 | 104 (17) | 63 | 38 |  |
| Congo, Republic | 2011 | 3,959 | 104 (13) | 66 | 35 |  |
| Cote d’ivoire | 2011 | 5,608 | 98 (16) | 75 | 50 |  |
| Eswatini | 2006 | 1,785 | 111 (15) | 42 | 21 |  |
| Ethiopia | 2005 | 3,385 | 106 (19) | 54 | 32 |  |
|  | 2011 | 8,502 | 110 (18) | 50 | 29 |  |
|  | 2016 | 7,790 | 105 (17) | 60 | 36 |  |
| Gabon | 2012 | 3,047 | 105 (14) | 64 | 34 |  |
| Gambia | 2013 | 2,862 | 99 (16) | 76 | 51 |  |
| Ghana | 2003 | 3,176 | 98 (19) | 75 | 53 |  |
|  | 2008 | 2,159 | 96 (17) | 80 | 58 |  |
|  | 2014 | 2,388 | 103 (15) | 70 | 42 |  |
|  | 2016 | 2,670 | 103 (15) | 66 | 39 |  |
| Guinea | 2003 | 2,678 | 98 (18) | 74 | 51 |  |
|  | 2012 | 2,792 | 96 (17) | 76 | 53 |  |
|  | 2018 | 3,040 | 100 (14) | 74 | 44 |  |
| Lesotho | 2004 | 1,320 | 110 (18) | 48 | 26 |  |
|  | 2009 | 1,447 | 109 (15) | 49 | 24 |  |
|  | 2014 | 1,150 | 108 (16) | 53 | 28 |  |
| Liberia | 2009 | 3,046 | 104 (14) | 65 | 35 |  |
|  | 2011 | 2,447 | 100 (15) | 75 | 49 |  |
|  | 2018 | 1,630 | 99 (14) | 80 | 52 |  |
| Madagascar | 2003 | 1,538 | 103 (14) | 67 | 29 |  |
|  | 2008 | 4,748 | 109 (14) | 51 | 20 |  |
|  | 2011 | 5,245 | 108 (14) | 51 | 25 |  |
|  | 2013 | 4,531 | 108 (15) | 49 | 24 |  |
|  | 2016 | 5,923 | 110 (14) | 45 | 20 |  |
| Malawi | 2004 | 2,315 | 100 (17) | 72 | 47 |  |
|  | 2010 | 4,173 | 103 (17) | 64 | 41 |  |
|  | 2012 | 1,900 | 101 (16) | 67 | 42 |  |
|  | 2014 | 1,752 | 105 (15) | 53 | 27 |  |
|  | 2015 | 4,671 | 104 (15) | 63 | 36 |  |
|  | 2017 | 1,752 | 105 (15) | 53 | 27 |  |
| Mali | 2001 | 2,897 | 94 (21) | 80 | 61 |  |
|  | 2006 | 3,740 | 95 (19) | 78 | 58 |  |
|  | 2012 | 4,190 | 93 (17) | 81 | 60 |  |
|  | 2015 | 6,489 | 93 (17) | 86 | 64 |  |
|  | 2018 | 3,872 | 95 (16) | 80 | 56 |  |
| Mozambique | 2011 | 4,357 | 101 (16) | 66 | 40 |  |
|  | 2015 | 3,878 | 103 (17) | 61 | 34 |  |
|  | 2018 | 3,728 | 95 (16) | 80 | 56 |  |
| Namibia | 2013 | 1,537 | 109 (15) | 51 | 26 |  |
| Niger | 2006 | 3,610 | 95 (19) | 80 | 59 |  |
|  | 2012 | 4,383 | 100 (15) | 75 | 49 |  |
| Nigeria | 2015 | 5,298 | 101 (16) | 68 | 42 |  |
|  | 2018 | 10,181 | 102 (16) | 69 | 42 |  |
| Rwanda | 2005 | 3,740 | 108 (17) | 51 | 30 |  |
|  | 2007 | 4,814 | 112 (15) | 41 | 17 |  |
|  | 2010 | 3,732 | 113 (14) | 38 | 14 |  |
|  | 2014 | 3,229 | 112 (14) | 36 | 15 |  |
| Sao Tome and Principe | 2008 | 1,537 | 105 (13) | 60 | 29 |  |
| Senegal | 2005 | 2,721 | 96 (17) | 81 | 60 |  |
|  | 2008 | 3,695 | 95 (17) | 81 | 58 |  |
|  | 2010 | 3,315 | 97 (16) | 78 | 54 |  |
|  | 2012 | 5,088 | 100 (16) | 72 | 47 |  |
|  | 2014 | 5,414 | 105 (16) | 61 | 35 |  |
|  | 2015 | 5,454 | 102 (15) | 71 | 43 |  |
|  | 2016 | 16,103 | 102 (15) | 70 | 41 |  |
|  | 2017 | 9,596 | 101 (15) | 74 | 46 |  |
| Sierra Leone | 2008 | 1,892 | 99 (16) | 76 | 47 |  |
|  | 2013 | 4,138 | 96 (16) | 80 | 54 |  |
| South Africa | 2016 | 824 | 103 (16) | 61 | 35 |  |
| Tanzania | 2005 | 7,230 | 101 (17) | 70 | 45 |  |
|  | 2007 | 5,630 | 102 (15) | 69 | 41 |  |
|  | 2010 | 6,010 | 105 (14) | 61 | 33 |  |
|  | 2011 | 6,717 | 106 (15) | 58 | 30 |  |
|  | 2015 | 8,012 | 105 (15) | 58 | 31 |  |
|  | 2017 | 6,256 | 106 (14) | 62 | 34 |  |
| Togo | 2013 | 2,889 | 101 (15) | 71 | 45 |  |
|  | 2017 | 2,869 | 99 (15) | 76 | 50 |  |
| Uganda | 2000 | 5,237 | 99 (21) | 67 | 48 |  |
|  | 2006 | 2,110 | 98 (17) | 74 | 52 |  |
|  | 2011 | 5,210 | 105 (18) | 59 | 37 |  |
|  | 2014 | 4,177 | 107 (17) | 55 | 30 |  |
|  | 2018 | 6,441 | 108 (16) | 55 | 30 |  |
| Zambia | 2018 | 7,740 | 106 (14) | 58 | 30 |  |
| Zimbabwe | 2005 | 3,443 | 105 (15) | 58 | 30 |  |
|  | 2010 | 3,376 | 106 (15) | 58 | 31 |  |
|  | 2015 | 4,153 | 112 (13) | 38 | 16 |  |

Supplementary Table 2. Distribution of haemoglobin concentration and anaemia prevalence among pregnant women[[2]](#footnote-2)

| **Country** | **Year** | **N** | **Haemoglobin**  **Mean (SD)** | **Anaemia**  **Prevalence (%)** | **Moderate to severe anaemia**  **Prevalence (%)** |
| --- | --- | --- | --- | --- | --- |
| Benin | 2001 | 372 | 99 (18) | 72 | 48 |
|  | 2011 | 480 | 111 (17) | 44 | 21 |
|  | 2017 | 878 | 102 (16) | 68 | 45 |
| Burkina Faso | 2003 | 431 | 105 (17) | 64 | 39 |
|  | 2010 | 820 | 106 (17) | 57 | 33 |
|  | 2016 | 664 | 110 (17) | 45 | 23 |
|  | 2018 | 600 | 113 (16) | 40 | 19 |
| Cameroon | 2004 | 532 | 109 (17) | 50 | 31 |
|  | 2011 | 752 | 110 (16) | 51 | 27 |
| Congo, DR | 2007 | 521 | 106 (18) | 53 | 32 |
|  | 2013 | 1,203 | 111 (17) | 47 | 26 |
| Congo, Republic | 2011 | 582 | 107 (14) | 58 | 30 |
| Cote d’ivoire | 2011 | 962 | 105 (17) | 62 | 34 |
| Eswatini | 2006 | 252 | 115 (16) | 36 | 15 |
| Ethiopia | 2005 | 474 | 118 (20) | 30 | 17 |
|  | 2011 | 1,226 | 120 (19) | 29 | 16 |
|  | 2016 | 1,053 | 117 (20) | 38 | 20 |
| Gabon | 2012 | 577 | 106 (16) | 59 | 35 |
| Gambia | 2013 | 367 | 101 (18) | 71 | 46 |
| Ghana | 2003 | 416 | 107 (18) | 61 | 29 |
|  | 2014 | 352 | 110 (14) | 51 | 29 |
| Guinea | 2005 | 382 | 103 (17) | 66 | 41 |
|  | 2012 | 488 | 104 (16) | 65 | 37 |
|  | 2018 | 455 | 109 (16) | 48 | 28 |
| Lesotho | 2004 | 202 | 116 (18) | 32 | 16 |
|  | 2009 | 183 | 117 (15) | 30 | 15 |
|  | 2014 | 139 | 115 (14) | 32 | 10 |
| Madagascar | 2003 | 211 | 110 (17) | 45 | 22 |
|  | 2008 | 693 | 114 (16) | 37 | 16 |
| Malawi | 2004 | 366 | 110 (18) | 48 | 25 |
|  | 2010 | 689 | 115 (16) | 36 | 18 |
|  | 2015 | 632 | 111 (17) | 45 | 22 |
| Mali | 2001 | 509 | 100 (19) | 73 | 52 |
|  | 2006 | 582 | 102 (17) | 66 | 39 |
|  | 2015 | 562 | 101 (17) | 69 | 45 |
| Mozambique | 2011 | 1,400 | 107 (17) | 52 | 30 |
| Namibia | 2013 | 274 | 119 (15) | 24 | 8 |
| Niger | 2006 | 560 | 107 (19) | 54 | 29 |
|  | 2012 | 681 | 106 (16) | 57 | 32 |
| Rwanda | 2005 | 429 | 119 (19) | 26 | 13 |
|  | 2007 | 655 | 122 (14) | 16 | 6 |
|  | 2014 | 480 | 119 (14) | 22 | 8 |
| Sao Tome and Principe | 2008 | 217 | 108 (14) | 52 | 18 |
| Senegal | 2005 | 380 | 101 (20) | 64 | 43 |
|  | 2008 | 484 | 101 (17) | 71 | 47 |
|  | 2010 | 468 | 105 (16) | 59 | 31 |
| Sierra Leone | 2008 | 266 | 108 (18) | 52 | 25 |
|  | 2013 | 667 | 108 (17) | 55 | 31 |
| South Africa | 2016 | 106 | 114 (15) | 35 | 16 |
| Tanzania | 2005 | 1,060 | 106 (18) | 58 | 34 |
|  | 2010 | 938 | 108 (24) | 54 | 30 |
|  | 2015 | 1,124 | 107 (16) | 59 | 34 |
| Togo | 2013 | 428 | 104 (17) | 62 | 34 |
| Uganda | 2000 | 786 | 111 (18) | 41 | 23 |
|  | 2006 | 340 | 108 (17) | 53 | 29 |
|  | 2011 | 282 | 119 (16) | 32 | 12 |
|  | 2016 | 634 | 113 (16) | 39 | 18 |
| Zimbabwe | 2005 | 510 | 114 (58) | 43 | 18 |
|  | 2010 | 644 | 117 (17) | 34 | 16 |
|  | 2015 | 564 | 116 (16) | 32 | 16 |

Supplementary Table 3. Distribution of haemoglobin concentration and anaemia prevalence among older adolescent girls (15 – 19-year-old)[[3]](#footnote-3)

| **Country** | **Year** | **N** | **Haemoglobin**  **Mean (±SD)** | **Anaemia**  **Prevalence (%)** | **Moderate to severe anaemia**  **Prevalence (%)** |
| --- | --- | --- | --- | --- | --- |
| Benin | 2001 | 594 | 111 (18) | 44 | 23 |
|  | 2011 | 886 | 121 (16) | 20 | 8 |
|  | 2017 | 1,645 | 115 (16) | 33 | 15 |
| Burkina Faso | 2003 | 964 | 117 (18) | 29 | 14 |
|  | 2010 | 1,643 | 117 (18) | 29 | 14 |
|  | 2016 | 1,954 | 123 (15) | 16 | 7 |
|  | 2018 | 1,656 | 121 (15) | 18 | 6 |
| Cameroon | 2004 | 1,274 | 120 (17) | 24 | 11 |
|  | 2011 | 1,839 | 122 (17) | 21 | 9 |
| Congo, DR | 2007 | 934 | 118 (18) | 26 | 13 |
|  | 2013 | 1,978 | 122 (26) | 22 | 10 |
| Congo, Republic | 2011 | 1,125 | 117 (14) | 29 | 12 |
| Cote d’ivoire | 2011 | 961 | 116 (17) | 29 | 14 |
| Eswatini | 2006 | 1,198 | 126 (16) | 13 | 6 |
| Ethiopia | 2005 | 1,397 | 129 (20) | 14 | 7 |
|  | 2011 | 3617 | 135 (17) | 8 | 4 |
|  | 2016 | 3,172 | 130 (17) | 12 | 6 |
| Gabon | 2012 | 1,203 | 112 (16) | 38 | 19 |
| Gambia | 2013 | 1,053 | 115 (17) | 34 | 16 |
| Ghana | 2003 | 1,022 | 120 (15) | 22 | 8 |
|  | 2014 | 878 | 118 (14) | 25 | 11 |
| Guinea | 2005 | 800 | 117 (35) | 32 | 20 |
|  | 2012 | 1,087 | 118 (16) | 27 | 13 |
| Lesotho | 2004 | 768 | 127 (19) | 15 | 8 |
|  | 2009 | 947 | 130 (16) | 11 | 4 |
|  | 2014 | 793 | 128 (17) | 13 | 5 |
| Madagascar | 2003 | 480 | 120 (17) | 20 | 8 |
|  | 2008 | 1,905 | 123 (15) | 18 | 5 |
| Malawi | 2004 | 536 | 119 (21) | 27 | 14 |
|  | 2010 | 1,637 | 127 (17) | 15 | 7 |
| Mali | 2001 | 726 | 111 (19) | 43 | 24 |
|  | 2006 | 1,039 | 114 (17) | 35 | 17 |
|  | 2015 | 1,013 | 111 (18) | 40 | 19 |
| Mozambique | 2011 | 3,023 | 115 (18) | 32 | 15 |
| Namibia | 2013 | 861 | 130 (16) | 9 | 4 |
| Niger | 2006 | 839 | 119 (19) | 26 | 14 |
|  | 2012 | 851 | 118 (17) | 25 | 12 |
| Nigeria | 2018 | 2,778 | 115 (15) | 32 | 13 |
| Rwanda | 2005 | 1,312 | 131 (17) | 10 | 4 |
|  | 2007 | 1,375 | 133 (15) | 5 | 2 |
|  | 2010 | 1,550 | 133 (15) | 5 | 2 |
|  | 2014 | 1,390 | 130 (14) | 7 | 2 |
| Sao Tome and Principe | 2008 | 518 | 117 (15) | 27 | 9 |
| Senegal | 2005 | 1,112 | 114 (19) | 37 | 19 |
|  | 2008 | 518 | 117 (15) | 27 | 9 |
|  | 2010 | 1,319 | 115 (18) | 29 | 14 |
| Sierra leone | 2008 | 553 | 116 (18) | 29 | 14 |
|  | 2013 | 1,793 | 118 (16) | 27 | 11 |
| South Africa | 2016 | 515 | 125 (18) | 20 | 10 |
| Tanzania | 2005 | 2,246 | 118 (17) | 28 | 13 |
|  | 2010 | 2,180 | 121 (20) | 23 | 10 |
|  | 2015 | 2,899 | 119 (17) | 25 | 11 |
| Uganda | 2000 | 1,476 | 126 (18) | 16 | 8 |
|  | 2006 | 624 | 123 (17) | 18 | 9 |
|  | 2011 | 620 | 130 (17) | 10 | 5 |
|  | 2016 | 1,377 | 124 (17) | 16 | 6 |
| Zambia | 2018 | 3,009 | 125 (16) | 15 | 7 |
| Zimbabwe | 2005 | 1,884 | 126 (48) | 16 | 7 |
|  | 2010 | 1,745 | 128 (18) | 15 | 7 |
|  | 2015 | 2,031 | 127 (17) | 13 | 6 |

1. Mean haemoglobin and prevalence of anaemia categories estimated considering the sampling approaches of the DHS (15) [↑](#footnote-ref-1)
2. Mean haemoglobin and prevalence of anaemia categories estimated considering the sampling approaches of the DHS [↑](#footnote-ref-2)
3. Mean haemoglobin and prevalence of anaemia categories estimated considering the sampling approaches of the DHS [↑](#footnote-ref-3)