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| Appendix Table 1. Survey Year, Sample Size, and Number of Clusters by Country |
| Country | Survey Year | Sample Size | Number of Clusters |
| 　 | Children | Women | 　 |
| Angola | 2015-2016 | 5906 | - | 625 |
| Benin | 2011-2012  | 10853 | 8149 | 555 |
| Burkina Faso | 2010 | 6068 | 8496 | 573 |
| Burundi | 2010 | 5469 | 8649 | 554 |
| Cameroon | 2011 | 4693 | 8033 | 578 |
| Congo | 2011-2012 | 4101 | 5703 | 384 |
| Congo Democratic Republic | 2013-2014  | 7513 | 9532 | 536 |
| Cote d'Ivoire | 2011-2012 | 3069 | 4956 | 351 |
| Eswatini | 2006-2007 | 1965 | 4707 | 274 |
| Ethiopia | 2016 | 8603 | 14827 | 642 |
| Gabon | 2012 | 3149 | 5606 | 335 |
| Ghana | 2014 | 2451 | 4798 | 427 |
| Guinea | 2012 | 2864 | 4751 | 300 |
| Lesotho | 2014 | 1201 | 3428 | 399 |
| Madagascar | 2008-2009 | 5025 | 8474 | 594 |
| Malawi | 2015-2016  | 4846 | 8135 | 850 |
| Mali | 2012-2013  | 4362 | 5236 | 413 |
| Mozambique | 2011 | 8766 | 13775 | 610 |
| Namibia | 2013 | 1674 | 4525 | 545 |
| Niger | 2012 | 4908 | 5134 | 476 |
| Rwanda | 2014-2015  | 3262 | 6789 | 492 |
| Sao Tome and Principe | 2008-2009 | 1608 | 2612 | 104 |
| Senegal | 2010-2011 | 9978 | 8238 | 400 |
| Sierra Leone | 2013 | 4424 | 8016 | 435 |
| Tanzania | 2015-2016  | 8182 | 13417 | 608 |
| Togo | 2013-2014  | 2974 | 4865 | 330 |
| Uganda | 2011 | 4030 | 6218 | 696 |
| Zimbabwe | 2015 | 4647 | 9596 | 400 |

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| Appendix Table 2. Odds Ratios from Logistic Regressions of Anemia on the Number of Livestock Owned (Outcome: binary) |
| Variables | Children aged 5-59 months  | Women aged 15-49 years |
| Unadjusted association  |  |
| Number of livestock owned | 1.007\*\*\* | 1.001\*\*\* |
|  | [1.006,1.008] | [1.001,1.002] |
| Adjusted association  |  |
| Livestock ownership | 1.001\*\*\* | 1.000  |
|  | [1.000,1.002] | [0.999,1.001] |
| Household-level covariates |
| Household size | 1.013\*\*\* | 1.011\*\*\* |
|  | [1.009,1.017] | [1.007,1.014] |
| Household head sex |  |
| Male (reference) |  |
|  |  |  |
| Female | 1.01 | 1.062\*\*\* |
|  | [0.977,1.045] | [1.035,1.089] |
| Location |  |  |
| Rural | 1.056\* | 0.965 |
|  | [1.010,1.105] | [0.929,1.002] |
| Urban (reference) |  |
|  |  |  |
| Wealth quintiles, % |  |
|  Lowest (reference) |  |
|  |  |  |
|  Low | 0.888\*\*\* | 0.947\*\* |
|  | [0.851,0.927] | [0.913,0.983] |
|  Middle | 0.914\*\*\* | 0.965 |
|  | [0.875,0.955] | [0.930,1.001] |
|  High | 0.855\*\*\* | 0.943\*\* |
|  | [0.815,0.898] | [0.906,0.981] |
|  Highest | 0.684\*\*\* | 0.840\*\*\* |
|  | [0.648,0.723] | [0.804,0.878] |
| Household access to improved water source |
| No (reference) |  |
|  |  |  |
| Yes | 0.993 | 1.003 |
|  | [0.957,1.030] | [0.973,1.035] |
| Household access to improved sanitation |
| No (reference) |  |
|  |  |  |
| Yes | 0.872\*\*\* | 0.946\*\*\* |
|  | [0.841,0.905] | [0.919,0.974] |
| Child age, months | 0.971\*\*\* |  |
|  | [0.970,0.972] |
| Child sex |  |  |
| Male (reference) |  |
|  |  |  |
| Female | 0.876\*\*\* |  |
|  | [0.854,0.899] |
| Highest attained education of mother |
|  None (reference) |  |
|  |  |  |
|  Primary | 0.844\*\*\* |  |
|  | [0.813,0.877] |
|  Secondary | 0.776\*\*\* |  |
|  | [0.740,0.814] |
|  Post-secondary | 0.642\*\*\* |  |
|  | [0.575,0.717] |
| Fever in the last 2 weeks |
| No (reference) |  |
|  |  |  |
| Yes | 1.425\*\*\* |  |
|  | [1.377,1.475] |
| Vitamin A in the last 6 months |
| No (reference) |  |
|  |  |  |
| Yes | 0.922\*\*\* |  |
|  | [0.892,0.953] |
| Missing | 0.877 |  |
|  | [0.734,1.048] |
| Iron supplement in the last 7 days |
| No (reference) |  |
|  |  |  |
| Yes | 0.931\*\* |  |
|  | [0.885,0.980] |
| Missing | 0.927 |  |
|  | [0.731,1.175] |
| Intestinal parasites drugs in the last 6 months |
| No (reference) |  |
|  |  |  |
| Yes | 0.971 |  |
|  | [0.939,1.004] |
| Missing | 0.989 |  |
|  | [0.832,1.177] |
| Diarrhea in the last 2 weeks | 1.057\*\* |  |
|  | [1.017,1.098] |
| Breastfed for at least 6 months |
|  Never breastfed (reference) |
|  |  |  |
|  Breastfed but not currently | 1.003 |  |
|  | [0.939,1.071] |
|  Still breastfeeding | 1.088\* |  |
|  | [1.014,1.166] |
|  Missing | 1.733 |  |
|  | [0.722,4.159] |
| Birth order | 0.992\* |  |
|  | [0.986,0.998] |
| Woman-level covariates |  |
| Age in years  | 0.999 |
|  |  | [0.998,1.000] |
| Number of cigarettes smoked in the last 24 hours | 1.003\*\* |
|  |  | [1.001,1.004] |
| Weight (kg) | 0.999\*\*\* |
|  |  | [0.999,1.000] |
| Highest attained education |
|  None (reference) |  |
|  |  |  |
|  Primary |  | 0.848\*\*\* |
|  |  | [0.822,0.875] |
|  Secondary | 0.836\*\*\* |
|  |  | [0.806,0.867] |
|  Post-secondary | 0.776\*\*\* |
|  |  | [0.723,0.832] |
| Sample Size | 118,612 | 162,310 |
|  |  |  |
| \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.  |

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| Appendix Table 3. Coefficients from Regressions of Hemoglobin Concentration on the Number of Livestock Owned, Controlling for Additional Covariates |
| Variables | Children aged 5-59 months  | Children aged 5-59 months  | Women aged 15-49 years | Women aged 15-49 years |
| Number of livestock owned | -0.001\*\*\* | -0.001\*\*\* | -0.001\* | -0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Mosquito spray |  |  |  |
| No (reference) |  |  |  |
|  |  |  |  |  |
| Yes | -0.002 | -0.003 | -0.011 | -0.025 |
|  | (0.035) | (0.026) | (0.035) | (0.025) |
| Bed net |  |  |  |  |
| No (reference) |  |  |  |
|  |  |  |  |  |
| Yes | 0.040 |  | 0.079\*\*\* |  |
|  | (0.022) |  | (0.023) |  |
| Household-level covariates |  |  |
| Household size | -0.009\*\*\* | -0.010\*\*\* | -0.001 | -0.004\* |
|  | (0.002) | (0.002) | (0.003) | (0.002) |
| Household head sex |  |  |  |
| Male (reference) |  |  |  |
|  |  |  |  |  |
| Female | 0.000 | 0.018 | -0.046\* | -0.046\*\*\* |
|  | (0.020) | (0.014) | (0.020) | (0.013) |
| Location |  |  |  |  |
| Rural | -0.104\*\*\* | -0.074\*\*\* | -0.024 | 0.028 |
|  | (0.023) | (0.019) | (0.025) | (0.019) |
| Urban (reference) |  |  |  |
|  |  |  |  |  |
| Wealth quintiles, % |  |  |  |
|  Lowest (reference) |  |  |  |
|  |  |  |  |  |
|  Low | 0.052\* | 0.051\*\* | -0.031 | 0.012 |
|  | (0.025) | (0.018) | (0.026) | (0.018) |
|  Middle | 0.043 | 0.050\*\* | 0.026 | 0.022 |
|  | (0.026) | (0.018) | (0.026) | (0.018) |
|  High | 0.132\*\*\* | 0.114\*\*\* | 0.039 | 0.022 |
|  | (0.027) | (0.020) | (0.028) | (0.019) |
|  Highest | 0.351\*\*\* | 0.328\*\*\* | 0.138\*\*\* | 0.114\*\*\* |
|  | (0.031) | (0.023) | (0.031) | (0.021) |
| Household access to improved water source |  |  |  |
| No (reference) |  |  |  |
|  |  |  |  |  |
| Yes | 0.012 | 0.002 | -0.028 | -0.011 |
|  | (0.021) | (0.016) | (0.022) | (0.015) |
| Household access to improved sanitation |  |
| No (reference) |  |  |  |
|  |  |  |  |  |
| Yes | 0.160\*\*\* | 0.156\*\*\* | 0.063\*\* | 0.091\*\*\* |
|  | (0.020) | (0.015) | (0.020) | (0.015) |
| Child age, months | 0.021\*\*\* | 0.022\*\*\* |  |  |
|  | (0.001) | (0.000) |  |  |
| Child sex |  |  |  |  |
| Male (reference) |  |  |  |
|  |  |  |  |  |
| Female | 0.153\*\*\* | 0.129\*\*\* |  |  |
|  | (0.014) | (0.010) |  |  |
| Highest attained education of mother |  |  |
|  None (reference) |  |  |  |
|  |  |  |  |  |
|  Primary | 0.124\*\*\* | 0.162\*\*\* |  |  |
|  | (0.021) | (0.015) |  |  |
|  Secondary | 0.199\*\*\* | 0.244\*\*\* |  |  |
|  | (0.025) | (0.019) |  |  |
|  Post-secondary | 0.394\*\*\* | 0.389\*\*\* |  |  |
|  | (0.061) | (0.041) |  |  |
| Fever in the last 2 weeks |  |  |
| No (reference) |  |  |  |
|  |  |  |  |  |
| Yes | -0.332\*\*\* | -0.343\*\*\* |  |  |
|  | (0.020) | (0.014) |  |  |
| Vitamin A in the last 6 months |  |  |
| No (reference) |  |  |  |
|  |  |  |  |  |
| Yes | 0.031 | 0.041\*\* |  |  |
|  | (0.018) | (0.013) |  |  |
| Missing | 0.103 | 0.113 |  |  |
|  | (0.108) | (0.072) |  |  |
| Iron supplement in the last 7 days |  |  |
| No (reference) |  |  |  |
|  |  |  |  |  |
| Yes | 0.050 | 0.048\* |  |  |
|  | (0.026) | (0.021) |  |  |
| Missing | 0.138 | -0.000 |  |  |
|  | (0.204) | (0.130) |  |  |
| Intestinal parasites drugs in the last 6 months |  |  |  |
| No (reference) |  |  |  |
|  |  |  |  |  |
| Yes | 0.028 | -0.001 |  |  |
|  | (0.018) | (0.013) |  |  |
| Missing | -0.046 | -0.101 |  |  |
|  | (0.155) | (0.090) |  |  |
| Diarrhea in the last 2 weeks | -0.084\*\*\* | -0.043\*\* |  |  |
|  | (0.022) | (0.015) |  |  |
| Breastfed for at least 6 months |  |  |
|  Never breastfed (reference) |  |  |
|  |  |  |  |  |
|  Breastfed but not currently | 0.002 | -0.005 |  |  |
|  | (0.038) | (0.025) |  |  |
|  Still breastfeeding | -0.075 | -0.080\*\* |  |  |
|  | (0.040) | (0.026) |  |  |
|  Missing | -0.451 | -0.262 |  |  |
|  | (0.844) | (0.271) |  |  |
| Birth order | 0.004 | 0.010\*\*\* |  |  |
|  | (0.003) | (0.002) |  |  |
| Woman-level covariates |  |  |  |
| Age in years  |  | -0.001 | -0.000 |
|  |  |  | (0.001) | (0.001) |
| Number of cigarettes smoked in the last 24 hours |  | -0.003 | -0.003\*\*\* |
|  |  |  | (0.002) | (0.001) |
| Weight (kg) |  | 0.001\* | 0.000\*\*\* |
|  |  |  | (0.000) | (0.000) |
| Highest attained education |  |  |
|  None (reference) |  |  |  |
|  |  |  |  |  |
|  Primary |  |  | 0.124\*\*\* | 0.142\*\*\* |
|  |  |  | (0.022) | (0.015) |
|  Secondary |  | 0.148\*\*\* | 0.160\*\*\* |
|  |  |  | (0.025) | (0.018) |
|  Post-secondary |  | 0.194\*\*\* | 0.231\*\*\* |
|  |  |  | (0.053) | (0.033) |
| Sample Size | 42,508  | 88,225  | 48,999  | 115,623  |
| \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.　　　 |