***West Africa Country Definition***

The main goal of this information collection request (ICR) is to receive and maintain Paperwork Reduction Act (PRA) clearance in advance of any Ebola outbreak in West Africa, so that a CDC can respond without delay. Because it is impossible to predict when and where a new Ebola outbreak may occur, we make assumptions to estimate time and cost burdens based on West African country populations and official language. In order to generalize the utility of this ICR, we translated forms into four official languages (English, French, Portuguese, and Arabic).

We used the United States Agency for International Development (USAID) list of West African countries. West Africa is defined as the region including 21 countries.[[1]](#footnote-1) Sorted by official language, they are:

* French - Benin, Burkina Faso, Cameroon, Côte D’Ivoire, Equatorial Africa, Gabon, Guinea, Mali, Niger, Senegal, and Togo.
* English – The Gambia, Ghana, Liberia, Nigeria, and Sierra Leone.
* Portuguese - Cape Verde, Guinea-Bissau, Sao Tome and Principe.
* Arabic – Chad and Mauritania.

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| **Western Africa** | | **Official Language[[2]](#footnote-2)** | **2015 Population Estimates**  **(in millions)[[3]](#footnote-3)** | |
| **Country** | **By Official Language (%)** |
| Benin | | French | 10.88m | 146.05m (37.49%) |
| Burkina Faso | | French | 17.91m |
| Cameroon | | French[[4]](#footnote-4) | 23.39m |
| Côte D’Ivoire | | French | 21.30m |
| Equatorial Guinea | | French[[5]](#footnote-5) | 0.80m |
| Gabon | | French | 1.75m |
| Guinea | | French | 12.35m |
| Mali | | French | 16.26m |
| Niger | | French | 19.27m |
| Senegal | | French | 14.97m |
| Togo | | French | 7.17m |
| Gambia, The | | English | 1.97m | 223.29m (57.32%) |
| Ghana | | English | 26.98m |
| Liberia | | English | 4.50m |
| Nigeria | | English | 183.52m |
| Sierra Leone | | English | 6.32m |
| Cape Verde | | Portuguese | 0.51m | 2.50m  (0.65%) |
| Guinea-Bissau | | Portuguese | 1.79m |
| Sao Tome and Principe | | Portuguese | 0.20m |
| Chad | | Arabic[[6]](#footnote-6) | 13.60m | 17.68m  4.54% |
| Mauritania | | Arabic | 4.08m |
| ***Total*** | | | ***389.52m*** | ***100%*** |
|  |  | | | | |

***West Africa Country Burden Estimates***

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We assume 30,000 annual cases to ensure ample burden hours are requested for future outbreaks. The World Health Organization (WHO) case count for 11 months (March, 2014-Jan 2015) is rounded to 22,000.[[7]](#footnote-7) Assuming an average of 2,000 cases per month, an annual estimate is 24,000 which is adjusted to 30,000 cases. Based on the 2014 Ebola Virus Response, this estimate is not outside of the realm of possibility in an uncontrolled outbreak.

We make a simplifying assumption based on the population size in each country that 57.32% of the Ebola cases will arise from countries with English as the official language (n=17,196), 37.49% will be from French-speaking countries (n=11,247), 0.65% will be from Portuguese-speaking countries (n=195), and 4.54% will be from Arabic-speaking countries (n=1,362).[[8]](#footnote-8) We are aware that the affected countries will vary from outbreak to outbreak; therefore, the proportion of forms by language for each outbreak will also vary from our simplified estimation model. It is also possible that translations into native dialects will be necessary. However, we anticipate that the total burden for each type of form regardless of language will remain within the requested approval for 30,000 annual cases.

*Case Investigation Forms:* Short forms were originally developed as a resource- and time-saving aid if the number of cases is larger than MoH surveillance teams can handle using long forms. In the CDC experience of the first year of the 2014 Ebola Response, we noted that the majority of the Ministries of Health (MoH) preferred the short forms.

* For this information collection request (ICR), we assume that 90% of the 30,000 cases would be tracked with short forms (**Attachments 1-4**) and 10% would be tracked with long forms (**Attachments 5-8**).
  + For English-speaking cases (n=17,196), this amounts to 15,476 short forms and 1,720 long forms.
  + For French-speaking cases (n=11,247), this amounts to 10,122 short and 1,125 long forms.
  + For Portuguese-speaking cases (n=195), this amounts to 176 short and 19 long forms.
  + For Arabic-speaking cases (n=1,362), this amounts to 1,226 short and 136 long forms.

Based on our 12-month case estimate (n=30,000), our assumptions are anticipated to cover maximum annual requirements. In total, CDC is requesting burden hours for a total of 27,000 short forms (10 minutes each, or 4,500 hours total) and 3,000 long forms (20 minutes each, or 1,000 hours total) for four official languages spoken in West Africa.

*Contact Investigation Forms:* Based on response field experience in 2014, a conservative estimate of the number of household contacts per EVD case is 10. Therefore, we estimate 300,000 contacts to be listed (**Attachments 9-12**) and traced for follow-up (**Attachment 13-16**). For the Contact Tracing Follow-up Form, we assume the contacts will take 3 minutes each day to take their temperatures and record them; therefore, for 21 days of monitoring, it will take 63 minutes to complete the form. These contacts will be interviewed to assess their risk of exposure to the Ebola virus (**Attachment 17-20**). By language, the number of contacts for each type of contact investigation form is estimated as follows:

* For English-speaking contacts (n=171,960).
* For French-speaking contacts (n=112,470).
* For Portuguese-speaking contacts (n=1,950).
* For Arabic-speaking contacts (n=13,620).

*Sex Transmission Case Investigations:* To more fully understand sexual transmission factors, adult cases who are survivors will be administered additional questionnaires (**Attachment 21-24**). CDC anticipates that 20 percent of the respondents will be adults willing to take part in this interview (n=6,000). These are new forms, not previously reviewed and approved by OMB. By language, the number of adult cases for each sex transmission investigation form will be:

* For English-speaking adult survivors (n=3,439).
* For French-speaking adult survivors (n=2,249).
* For Portuguese-speaking adult survivors (n=39).
* For Arabic-speaking adult survivors (n=273).

*Healthcare Worker Surveys:* We assume that 15 percent of the 30,000 cases will be healthcare workers that may take part in additional exposure risk factor surveys (n=4,500) (**Attachments 25-26** and country-customized forms for Liberia and Sierra Leone as **Attachments 27-28**). By language, the number of adult cases for the healthcare worker survey form will be:

* For English-speaking healthcare workers not in Liberia and Sierra Leone (n=2,455).
* For English-speaking healthcare workers in Liberia (n=52).
* For English-speaking healthcare workers in Sierra Leone (n=73).
* For French-speaking healthcare workers (n=1,687).
* For Portuguese-speaking healthcare workers (n=29).
* For Arabic-speaking healthcare workers (n=204).

*Health Facility Surveys:* For the Health Facility Assessment and Case Finding Survey (**Attachments 29-32**), we assume that such an assessment may be reasonably be conducted for 20% of the facilities caring for the annual 30,000 cases by MoHs, as resources permit (n=6,000). By language, the number of adult cases for the healthcare worker survey form will be:

* For English-speaking healthcare facilities (n=3,439).
* For French-speaking healthcare facilities (n=2,249).
* For Portuguese-speaking healthcare facilities (n=39).
* For Arabic-speaking healthcare facilities (n=273).

***West Africa Country Wage Estimates***

For purposes of estimating respondent hourly wages, we obtained minimum wages from the International Labour Organization (ILO) Working Conditions Law Database[[9]](#footnote-9)) or internet news pages where published.

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| **West Africa** | **Official Language** | **2015 Population Estimate** | **Minimum Wage Estimates** | | | | **Source** |
| **Country Wage Rate** | **US Dollar[[10]](#footnote-10)** | | |
| **Monthly** | **Daily** | **Hourly** |
| Benin | French | 10.88m | 31,625 CFA francs/month | 60.45 |  | 0.38 | International Labour Organization |
| Burkina Faso | French | 17.91m | 30,684 CFA francs/month | 58.65 |  | 0.37 | International Labour Organization |
| Cameroon | French | 23.39m | 36,270 CFA francs/month | 62.56 |  | 0.39 | Internet News 2014 |
| Côte D'Ivoire | French | 21.30m | 60,000 CFA francs/month | 114.69 |  | 0.72 | Internet News 2013 |
| Equatorial Guinea | French | 0.80m | 95.400 CFA francs/month | 165.75 |  | 1.04 | International Labour Organization |
| Gabon | French | 1.75m | 80,000 CFA francs/month | 138.99 |  | 0.87 | International Labour Organization |
| Guinea | French | 12.35m | 440,000 G francs/month | 60.17 |  | 0.38 | Internet 2013 |
| Mail | French | 16.26m | 28,460 CFA francs/month | 54.40 |  | 0.34 | International Labour Organization |
| Niger | French | 19.27m | 28,347 CFA francs/month | 54.19 |  | 0.34 | International Labour Organization |
| Senegal | French | 14.97m | 209.10 CFA francs/hour |  |  | 0.40 | International Labour Organization |
| Togo | French | 7.17m | 28,000 CFA francs/month | 53.52 |  | 0.33 | International Labour Organization |
| ***French West Africa*** | | ***146.05m*** | ***Minimum Wage Weighted for Country Population*** | | | ***0.43*** |  |
| Gambia, The | English | 1.97m | 19.55 G dalasi/day |  | 5.84 | 0.73 | International Labour Organization |
| Ghana | English | 26.98m | 7 G cedi/day |  | 2.09 | 0.26 | Internet News 2015 |
| Liberia | English | 4.50m | 6 USD/day or 75 cents/hour |  | 6.00 | 0.75 | Internet News 2013 |
| Nigeria | English | 183.52m | 18,000 N naira/month | 95.10 |  | 0.59 | International Labour Organization |
| Sierra Leone | English | 6.32m | 500,000 SL leone/month | 112.65 |  | 0.70 | Internet News 2015 |
| ***English West Africa*** | | ***223.29m*** | ***Minimum Wage Weighted for Country Population*** | | | ***0.55*** |  |
| Cape Verde | Portuguese | 0.51m | 11,000 CV escudos/month | 123.40 |  | 0.77 | Internet News 2013 |
| Guinea-Bissau | Portuguese | 1.79m | 19,030 CFA francs/month plus a bag of rice | 36.38 |  | 0.23 | International Labour Organization |
| Sao Tome and Principe | Portuguese | 0.2m | 750,000 dobras/month [[11]](#footnote-11) | 34.32 |  | 0.21 | Internet News 2014 |
| ***Portuguese West Africa*** | | ***2.50m*** | ***Minimum Wage Weighted for Country Population*** | | | ***0.34*** |  |
| Chad | Arabic | 13.6m | 147.00 CFA/hour |  |  | 0.26 | International Labour Organization |
| Mauritania | Arabic | 4.08m | 21,150 ouguiya/month | 70.20 |  | 0.44 | International Labour Organization |
| ***Arabic West Africa*** | | ***17.68m*** | ***Minimum Wage Weighted for Country Population*** | | | ***0.30*** |  |
| ***Total Population*** | | ***389.52m*** |  |  |  | ***0.50*** |  |

***West Africa Country Cost Estimates***

The method for calculating a weighted hourly cost estimate for respondents from USAID West Africa Regional (all countries and official languages) and for the countries grouped by official languages is displayed below.[[12]](#footnote-12)

Hourly minimum wage rate = USD per hour = or

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| **Wage Weighted for Country Population**  **(English, French, Portuguese, and Arabic)** | | | | | **Wage Weighted for Country Population**  **(French)** | | | | | | | **Wage Weighted for Country Population**  **(English)** | | | | | |
| ***(Country Popn/Total Popn)\*(Hourly Wage) = Country Weight*** | | | | | ***(Country Popn/Total Popn)\*(Hourly Wage) = Country Weight*** | | | | | | | ***(Country Popn/Total Popn)\*(Hourly Wage) = Country Weight*** | | | | | |
| 10.88 | 389.52 | 0.38 | 0.010614 |  | 10.88 | 113.4 | 0.38 | 0.028308 | | |  | 1.97 | 223.29 | 0.73 | 0.006441 | |  |
| 17.91 | 389.52 | 0.37 | 0.017012 |  | 17.91 | 113.4 | 0.37 | 0.045373 | | |  | 26.98 | 223.29 | 0.26 | 0.031416 | |  |
| 23.39 | 389.52 | 0.39 | 0.023419 |  | 23.39 | 113.4 | 0.39 | 0.062459 | | |  | 4.50 | 223.29 | 0.75 | 0.015115 | |  |
| 21.3 | 389.52 | 0.72 | 0.039372 |  | 21.3 | 113.4 | 0.72 | 0.105005 | | |  | 183.52 | 223.29 | 0.59 | 0.484916 | |  |
| 0.8 | 389.52 | 1.04 | 0.002136 |  | 0.8 | 113.4 | 1.04 | 0.005697 | | |  | 6.32 | 223.29 | 0.70 | 0.019813 | |  |
| 1.75 | 389.52 | 0.87 | 0.003909 |  | 1.75 | 113.4 | 0.87 | 0.010425 | | |  | 223.29 | ***< SUM >*** | | 0.551259 | |  |
| 12.35 | 389.52 | 0.38 | 0.012048 |  | 12.35 | 113.4 | 0.38 | 0.032133 | | |  | Unskilled Workers | | | | $0.55 |  |
| 16.26 | 389.52 | 0.34 | 0.014193 |  | 16.26 | 113.4 | 0.34 | 0.037853 | | |  | Skilled Workers | | | | $5.51 |  |
| 19.27 | 389.52 | 0.34 | 0.016820 |  | 19.27 | 113.4 | 0.34 | 0.044860 | | |  | Highly Skilled Workers | | | | $11.02 |  |
| 14.97 | 389.52 | 0.40 | 0.015373 |  | 14.97 | 113.4 | 0.40 | 0.041000 | | |  |  | |  | | |  |
| 7.17 | 389.52 | 0.33 | 0.006074 |  | 7.17 | 113.4 | 0.33 | 0.016201 | | |  |  | |  | | |  |
| 1.97 | 389.52 | 0.73 | 0.003692 |  | 113.4 | ***< SUM >*** | | 0.429312 | | |  |  | |  | | |  |
| 26.98 | 389.52 | 0.26 | 0.018009 |  | Unskilled Workers | | | | | $0.43 |  |  | |  | | |  |
| 4.50 | 389.52 | 0.75 | 0.008665 |  | Skilled Workers | | | | | $4.29 |  |  |  |  |  | |  |
| 183.52 | 389.52 | 0.59 | 0.277975 |  | Highly Skilled Workers | | | | | $8.59 |  |  |  |  |  | |  |
| 6.32 | 389.52 | 0.70 | 0.011358 |  |  |  |  |  | | |  |  |  |  |  | |  |
| 0.51 | 389.52 | 0.77 | 0.001008 |  | **Wage Weighted for Country Population**  **(Portuguese)** | | | | | | | **Wage Weighted for Country Population**  **(Arabic)** | | | | | |
| 1.79 | 389.52 | 0.23 | 0.001057 |  |
| 0.20 | 389.52 | 0.21 | 0.000108 |  | ***(Country Popn/Total Popn)\*(Hourly Wage) = Country Weight*** | | | | | | | ***(Country Popn/Total Popn)\*(Hourly Wage) = Country Weight*** | | | | | |
| 13.6 | 389.52 | 0.44 | 0.009078 |  | 0.51 | 2.50 | 0.77 | | 0.157080 | |  | 13.6 | 17.68 | 0.44 | 0.200000 | |  |
| 4.08 | 389.52 | 0.38 | 0.004609 |  | 1.79 | 2.50 | 0.23 | | 0.164680 | |  | 4.08 | 17.68 | 0.38 | 0.101538 | |  |
| 389.52 | ***< SUM >*** | | 0.496527 |  | 0.20 | 2.50 | 0.21 | | 0.016800 | |  | 17.68 | ***< SUM >*** | | 0.301538 | |  |
| Unskilled Workers | | | $0.50 |  | 2.50 | ***< SUM >*** | | | 0.338560 | |  | Unskilled Workers | | | $0.30 | |  |
| Skilled Workers | | | $4.95 |  | Unskilled Workers | | | | $0.34 | |  | Skilled Workers | | | $3.02 | |  |
| Highly Skilled Workers | | | $9.93 |  | Skilled Workers | | | | $3.38 | |  | Highly Skilled Workers | | | $6.03 | |  |
|  | | |  |  | Highly Skilled Workers | | | | $6.77 | |  |  |  |  |  | |  |
|  | | |  |  |  | | | |  | |  |  |  |  |  | |  |

*Healthcare Worker Surveys:* The CDC and WHO worked collaboratively to develop the “Healthcare Worker Ebola Virus Disease Exposure Report (**Attachments 25-26)**. Two English-speaking countries, Liberia and Sierra Leone, chose to customize this form (**Attachments 27-28**). To estimate burden and cost estimates, we calculated average wages for English-speaking countries, excluding Liberia and Sierra Leone, For Liberia and Sierra Leone, we used their published hourly minimum wages.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **West Africa** | **Official Language** | **2013 Population Estimate** | **Minimum Wage Estimates** | | | | **Source** | |
| **Country Wage** | **US Dollar[[13]](#footnote-13)** | | |
| **Monthly** | **Daily** | **Hourly** | |  |
| Gambia, The | English | 1.97m | 19.55 G dalasi/day |  | 5.84 | 0.73 | | International Labour Organization |
| Ghana | English | 26.98m | 7 G cedi/day |  | 2.09 | 0.26 | | Internet News 2015 |
| Nigeria | English | 183.52m | 18,000 N naira/month | 95.10 |  | 0.59 | | International Labour Organization |
| ***English West Africa, excluding Liberia and Sierra Leone*** | | ***212.47m*** | ***Minimum Wage Weighted for Country Population*** | | | ***0.52*** | |  |

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| **Wage Weighted for Country Population**  **(English without Sierra Leone or Guinea)** | | | | | | | |
| ***(Country Popn/Total Popn)\*(Hourly Wage) = Country Weight*** | | | | | | | |
|  | 1.97 | 212.47 | | 0.73 | 0.006441 | |  |
|  | 26.98 | 212.47 | | 0.26 | 0.031416 | |  |
|  | 183.52 | 212.47 | | 0.59 | 0.484916 | |  |
|  | 212.47 | ***< SUM >*** | | | 0.522772 | |  |
|  | Unskilled Workers | | | | | $0.52 |  |
|  | Skilled Workers | | | | | $5.23 |  |
|  | Highly Skilled Workers | | | | | $10.46 |  |
|  |  |  |  | | |  |  |

1. Source: USAID West Africa Regional at <http://www.usaid.gov/west-africa-regional>. List of countries provided by email communication with USAID contact listed on webite on 06/18/2015. [↑](#footnote-ref-1)
2. Source: The CIA World Factbook. Accessed 06/18/2015 at <https://www.cia.gov/library/publications/the-world-factbook/fields/2098.html> [↑](#footnote-ref-2)
3. Source: World Population Review. Accessed 06/18/2015 at <http://worldpopulationreview.com/countries/> [↑](#footnote-ref-3)
4. Cameroon official languages are English and French. French assumed for purposes of this estimation. [↑](#footnote-ref-4)
5. Equatorial Guinea official languages are French and Spanish. French assumed for purposes of this estimation. [↑](#footnote-ref-5)
6. Chad official languages are Arabic and French. Arabic assumed for purposes of this estimation. [↑](#footnote-ref-6)
7. Source: CDC Ebola (Ebola Virus Diease). Accessed 02/02/2015 at <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html> [↑](#footnote-ref-7)
8. Source: World Population Review. Accessed 06/18/2015 at <http://worldpopulationreview.com/countries/> [↑](#footnote-ref-8)
9. **Source ILO database:** ILO Working Conditions Laws Database. ILO, Geneva. Available at: <http://www.ilo.org/dyn/travail> [↑](#footnote-ref-9)
10. USD conversion performed 06/20/2015 at eXchangeRate.com at <http://www.exchangerate.com/currency-converter/XOF/USD/60,000%20/?XR-200Plus_Converter=convert&calc_short_from_iso=59&calc_short_to_iso=239> [↑](#footnote-ref-10)
11. Sao Tome and Principe has no national minimum wage but has this minimum wage for civil servants. Available at <http://www.refworld.org/docid/53284a7914.html>. [↑](#footnote-ref-11)
12. Assume 8 hours/day; 40 hours/week; 4 weeks/month; 160 hours/month. Assume minimum wage applies to unskilled workers. Assume due to lack of documented information from existing sources, wages for skilled workers (e.g., healthcare workers, laboratory, and environmental services personnel) are 10 times minimum wage. Assume due to lack of documented information from existing sources, wages for highly skilled workers and executives (e.g., clinicians and health directors) are 20 times minimum wage. [↑](#footnote-ref-12)
13. USD conversion performed 06/20/2015 at eXchangeRate.com at <http://www.exchangerate.com/currency-converter/XOF/USD/60,000%20/?XR-200Plus_Converter=convert&calc_short_from_iso=59&calc_short_to_iso=239> [↑](#footnote-ref-13)