Department of Defense
Armed Forces Health Surveillance Center
West Africa Ebola Surveillance Summary
(9 APR 2015)

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DEPARTMENT OF DEFENSE (AFHSC)

West Africa Ebola Surveillance Summary #94

9 APR 2015 (next report 16 APR 2015)

CASE REPORT: Since the previous summary (2 APR), there has been an increase of 31 confirmed and 87 suspected and/or probable Ebola virus disease (EVD) cases, (+101 total deaths), bringing the total to 25,567 cases (10,599 deaths). Guinea, Liberia, and Sierra Leone reported suspected cases, but only Guinea and Sierra Leone reported new confirmed cases for this time period. The total includes past cases and deaths from Senegal, Nigeria, the United States, Spain, Mali, and the United Kingdom. The United Kingdom, which was declared EVD-free on 10 MAR, reported on 12 MAR that one of its soldiers was diagnosed with EVD in Sierra Leone and was flown to London for treatment. That soldier was the first EVD patient to receive an experimental Chinese drug, MIL-77, during her treatment. On 13 MAR, an American healthcare worker was moved via non-commercial air transport to the NIH Clinical Center for treatment after testing positive for EVD in Sierra Leone. This healthcare worker is currently in good condition. Seventeen contacts of this case have been evacuated to the U.S. for active monitoring since 13 MAR; all have been released as of 6 APR.

According to WHO's 8 APR 2015 situation report, in the week ending 5 APR confirmed case incidence in Guinea decreased from 57 in the prior week to 21 cases, while Sierra Leone reported a decrease from 25 to 9 cases. The male infant reported as EVD positive in Kailahun, Sierra Leone was reclassified as Lassa fever after a subsequent investigation. In Guinea, 21 unsafe burials were discovered during the week. Throughout Guinea, unidentified transmission chains continue to drive the outbreak; only 48% of new confirmed cases arose from registered contacts. The only recently confirmed EVD case in Liberia died on 27 MAR in the Monrovian Medical Unit (MMU). Investigation into the confirmed case in Liberia is ongoing; media reports that the case had sexual contact with a male Ebola survivor.

On 20 JAN 2015, WHO's fourth Emergency Committee meeting on the 2014 EVD outbreak unanimously agreed that the outbreak continues to constitute a Public Health Emergency of International Concern (PHEIC) and that all previous temporary recommendations remain in effect with some additional advice.

DoD SURVEILLANCE GUIDELINES: On 31 OCT 2014, the Under Secretary of Defense for Personnel and Readiness (USD(P&R)) issued a memorandum providing guidance for training, screening, and monitoring for DoD personnel deployed to Ebola outbreak areas. The USD(P&R) also published electronic versions of the Ebola risk evaluation form (DD2990) and redeployment risk assessment form (DD2991). On 5 JAN 2015, the Armed Forces Health Surveillance Center published updated guidelines for the detection and reporting of DoD cases of EVD.

MEDICAL COUNTERMEASURES: There are no approved vaccines or specific treatments for EVD. On 9 DEC 2014, HHS offered liability protections to drug makers developing Ebola vaccines. Of four drug candidates, ZMapp, TKM-Ebola, brincidofovir, and favipiravir, the latter two started trials in West Africa in JAN 2015. An official trial of ZMapp has started in Liberia; NIAID is negotiating to extend the trial into Sierra Leone. On 20 FEB, WHO approved the first rapid test for Ebola; it will be deployed in West Africa during April or May 2015. A comparison of the six Ebola vaccines being actively tested can be found on page 4 of this report, along with the current pharmaceutical treatments. On 25 MAR, WHO reported on the first efficacy trial of an Ebola vaccine in Guinea; the VSV-EBOV vaccine was administered this week in Coyah prefecture where EVD transmission is ongoing. Ring vaccination occurred in the community of Basse-Guinée, one of the areas where most new EVD cases are found. BioCryst Pharmaceuticals has won a U.S. government contract to continue development of BCX4430, an Ebola treatment being funded by the NIH and the Biomedical Advanced Research and Development Authority. On 8 APR, the University of Texas and Profectus Biosciences announced initial success in developing a single dose Ebola vaccine that produces less side effects than other options and was tested with the current outbreak strain.

Links to Additional Sections of this Report		
DoD, USG and Global Response & Travel Advisories	Latest Case Counts	Medical Countermeasures in Development
New Cases (Last 21 days) by Admin Area (map)	New Confirmed Cases with Trend Line	Additional Resources

Text updated from the previous report will be printed in red; items in (+xx) represent the change in number from the previous AFHSC summary (2 APR 2015).

All information has been verified unless noted otherwise. Sources include WHO, CDC, and health agencies in Guinea, Liberia, and Sierra Leone.

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DoD RESPONSE:. On 11 FEB, President Obama said that approximately 100 DoD personnel would remain as the response transitions to support provided mostly by civilian employees of government agencies and volunteers. In Liberia, three USG supported laboratories will reportedly retain full operations (the Liberian Institute of Biomedical Research in Margibi, Cuttington University in Bong, and the ELWA facility in Montserrado). DoD has completed and transferred to USAID all ten planned ETUs. The 48th Chemical, Biological, Radiological, and Nuclear Brigade will deploy to Liberia, replacing the 101st Airborne Division as the joint forces' headquarters element, to provide oversight duties. As of 22 MAR, 119 members of Task Force Iron Knights returned to Fort Bliss and completed the 21-day monitoring period. Additionally, 22 members of the 1st Area Medical Laboratory returned to Aberdeen Proving Ground and 32 soldiers of the 82nd Civil Affairs Battalion returned to Fort Stewart during the week of 22 MAR.

On 8 JAN 2015, SECDEF signed a memo delegating authority to use DoD aircraft to transport Ebola symptomatic or exposed DoD personnel. On 17 DEC 2014, the CJCS issued an updated CJCSI 4220.01A, implementing SECDEF's 21-day controlled monitoring policy. The updated policy lays out who is affected and how the monitoring will be conducted, including naming seven monitoring sites: Ft. Bliss, TX; JB Langley-Eustis, VA; Ft. Hood, TX; Ft. Bragg, NC; and JB Lewis-McCord, WA in CONUS, plus USAG Baumholder, Germany and Caserma Del Din, Vicenza, Italy, OCONUS. On 7 NOV 2014, DoD issued guidance on medical care of DoD civilians deployed to Ebola outbreak areas.

FDA has issued Emergency Use Authorizations (EUA) for several in vitro diagnostics for detection of Ebola virus. Under the EUAs, the DoD EZ1 real time RT-PCR Ebola Zaire virus detection assay developed by USAMRIID is approved for human diagnostic testing at the following DoD labs: USAMRIID, Landstuhl RMC, NIDDL at NMRC, NHRC, NAMRU-3, NAMRU-6, William Beaumont AMC, Carl R. Darnall AMC, Madigan AMC, Tripler AMC, and SAAMC. In Liberia, the Navy's mobile lab and the USAMRIID-supported Liberian Institute for Biological Research in Monrovia are qualified to perform Ebola diagnostic testing on U.S. personnel. Joint Base Langley-Eustis, Carl R. Darnall AMC, Wright-Patterson MC, WRNMMC, SAAMC, Madigan AMC, Womack AMC, Landstuhl RMC, Eisenhower AMC, and NIDDL have been approved as BioFire FilmArray NGDS BT-E Assay testing sites. The Corgenix ReEBOV Rapid Antigen Test was the most recent assay approved under the EUA on 24 FEB. The Roche LightMix® Ebola Zaire rRT-PCR Test was approved for the presumptive detection of Ebola Zaire virus in individuals with signs and symptoms of Ebola disease, on 23 DEC 2014. As of 24 MAR, Cepheid announced that it received an EUA from the Food and Drug Administration for its Xpert Ebola molecular diagnostic test that gives results within two hours; it requires the use of Cepheid's GeneXpert bench top system.

USG AND GLOBAL RESPONSE: Current information and guidance is available at the CDC and WHO Ebola web sites. An ongoing European Union project ,DISCOGNOSIS, will focus on developing an easily portable laboratory machine, which can test for several tropical diseases at the same time using pre-set lab disks and a small blood sample. The device will be validated in Senegal and the Democratic Republic of Congo. On 18 MAR, WHO published the first of the "Ebola Diaries"; additional segments of the "Diaries" were released in MAR 2015 detailing risk communication efforts, logistics, and patient treatment.

TRAVEL ADVISORY: The CDC is maintaining its Warning - Level 3, Avoid Nonessential Travel advisory for Guinea, Sierra Leone, and Liberia. All flights carrying travelers from the affected West African nations must enter the U.S. through one of the five designated airports that are conducting enhanced screening for EVD (JFK, Newark Liberty, Washington Dulles, Chicago O'Hare, and Atlanta Hartsfield-Jackson). U.S. military aircraft do not need to be re-routed to one of these airports, provided that Customs and Border Protections has been assured that the established DoD screening protocols will take place at the arrival location. On 28 OCT 2014, the CDC recommended that state public health departments begin direct active post-arrival monitoring for 21 days along with other movement restrictions based on a traveler's exposure risk category using CDC definitions. On 20 JAN 2015, WHO reaffirmed the need to avoid unnecessary interference with international travel and trade.

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Latest Available Ebola Case Counts in or Related to West Africa, 2014-2015

Country (as of date)	EVD Cases All / Lab Confirmed	Deaths All / Lab Confirmed	EVD Cases in HCW / Deaths	Contacts Being Followed
Guinea (7 APR)	3,515 (+21) / 3,093 (+20)	2,335 (+15) / 1,921 (+15)	186 / 94	2,657
Liberia (5 APR)	9,862 (-36) / 3,151	4,408 (+55) / NA	372 / 180	332
Sierra Leone (7 APR)	12,155 (+133) / 8,558 (+11)	3,841 (+31) / 3,475 (+31)	303 / 221	3,338
United Kingdom (22 JAN)	1 / 1 ***	0 / 0	1 / 0***	0
United States (4 DEC)	4 / 4* **	1 / 1	3 / 0	0
Mali (21 DEC)	8 / 7	6 / 5	2 / 2	0
Nigeria (17 SEP)	20 / 19	8 / 7	11 / 5	0
Senegal (20 SEP)	1 / 1*	0 / 0	0 / 0	0
Spain (2 DEC)	1 / 1	0 / 0	1 / 0	0
Total	25,567 (+118) / 14,835 (+31)	10,599 (+101) / 5,409 (+46)†	879 / 502	6,327

Case Fatality Proportion: As of 8 APR 2015, the WHO said the case fatality rate in the three intense-transmission countries among cases for whom a definitive outcome is recorded is between 49% and 64%. For hospitalized patients, the case fatality rate is 49% in Guinea, 49% in Liberia, and 64% in Sierra Leone.

†Excluding Liberia / *Imported from Liberia / **1 imported from Guinea / ***Imported from Sierra Leone / NA = Not Available

Shaded countries have been declared Ebola transmission-free by WHO.

The total number of cases is subject to change due to reclassification, retrospective investigation, consolidation of cases and laboratory data, and enhanced surveillance.

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Ebola Medical Countermeasures In Development, 2014-2015

Name	Type	Company	Testing Location	FDA Status
cAd3-EBO Z	Vaccine	GlaxoSmithKline partnered with NIAID	Liberia, Guinea (WHO)	Phase 2/3
VSV-ZEBOV	Vaccine	Public Health Agency Canada/ Newlink Genetics Corp partnered with Merck	Liberia, Guinea, Sierra Leone	Phase 2/3
Ebola Ad26, MVA-BN-filo	Vaccine	Johnson & Johnson partnered with Bavarian Nordic A/S	Britain	Phase 1
Ebola GP Vaccine	Vaccine	Novavax, Inc.	Australia	Phase 1
MVA Ebola Zaire Vaccine	Vaccine	Oxford University, GlaxoSmithKline, NIAID	Britain	Phase 1
Ad5-EBOV, Zaire Ebola 2014 strain	Vaccine	Beijing Institute of Biotechnology, Jiangsu Province CDCP	China	Phase 1
rVSV-ZEBOV (second generation VSV-ZEBOV)	Vaccine	University of Texas - Galveston and Profectus Biosciences	United States	Animal testing
Favipiravir	Drug	Toyama Chemical	Guinea	Phase 2
Brincidofovir	Drug	Chimerix, Inc.	Liberia	Halted/cancelled
ZMapp	Drug	Mapp Pharmaceuticals	Liberia	Phase 2
TKM-Ebola	Drug	Tekmira Pharmaceuticals	Guinea, Sierra Leone	Phase 2
BCX4430	Drug	BioCryst Pharmaceuticals partnered with NIH, HHS	United States	Phase 1
Convalescent Plasma Therapy	Procedure	ClinicalRM with multiple partners	Liberia, Guinea, Sierra Leone	Phase 1/2

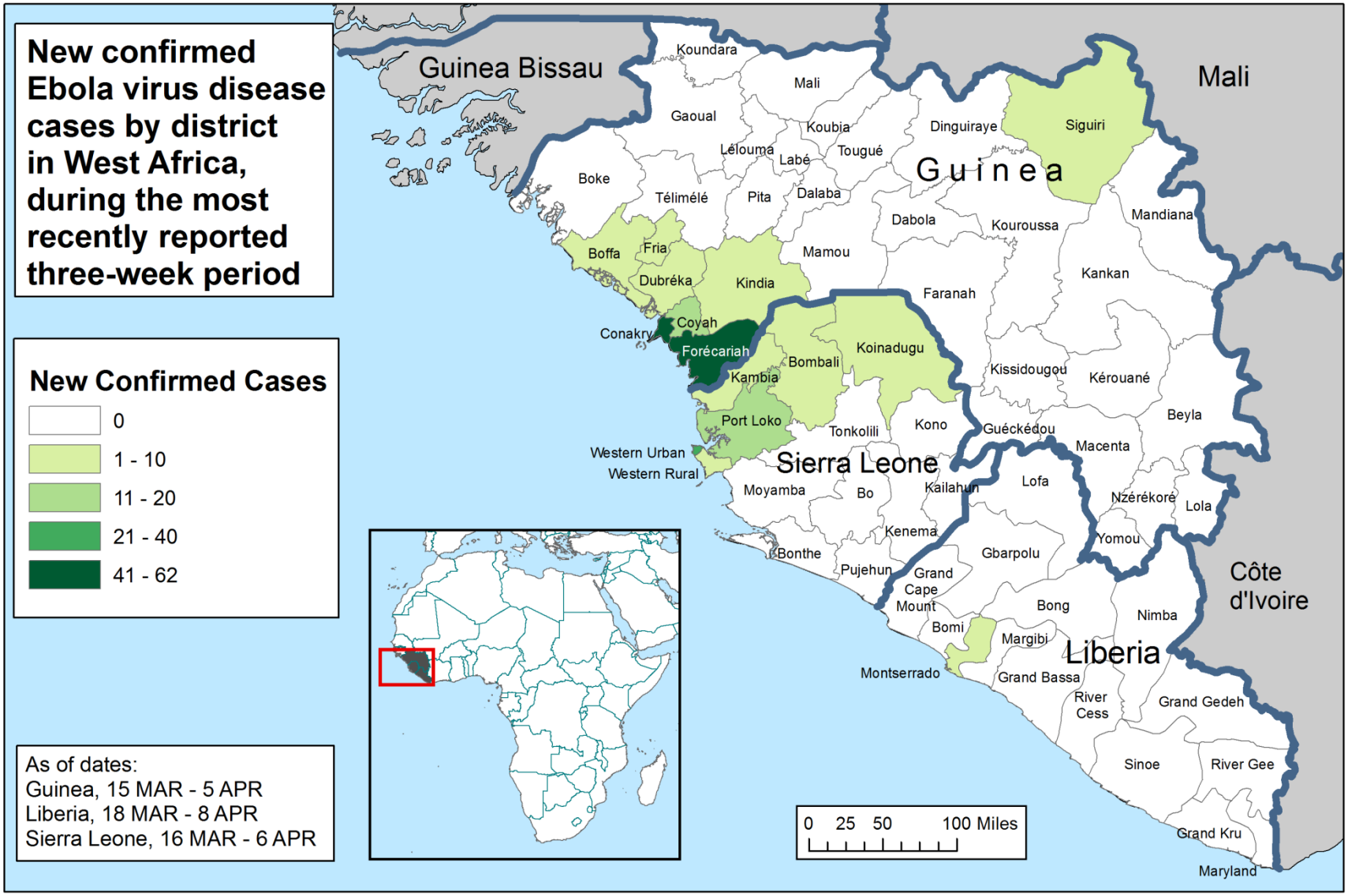
All information has been verified unless noted otherwise. Sources include WHO, NIAID, CDC, FDA, NIH, and open source news.

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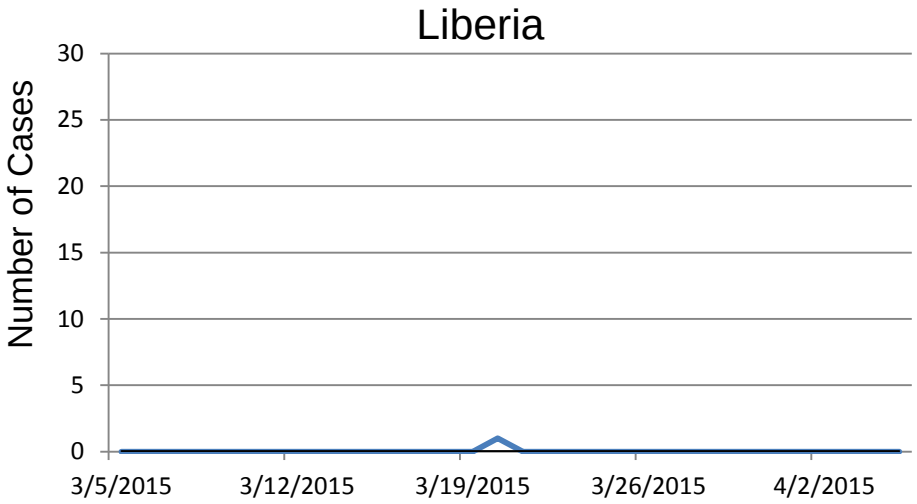


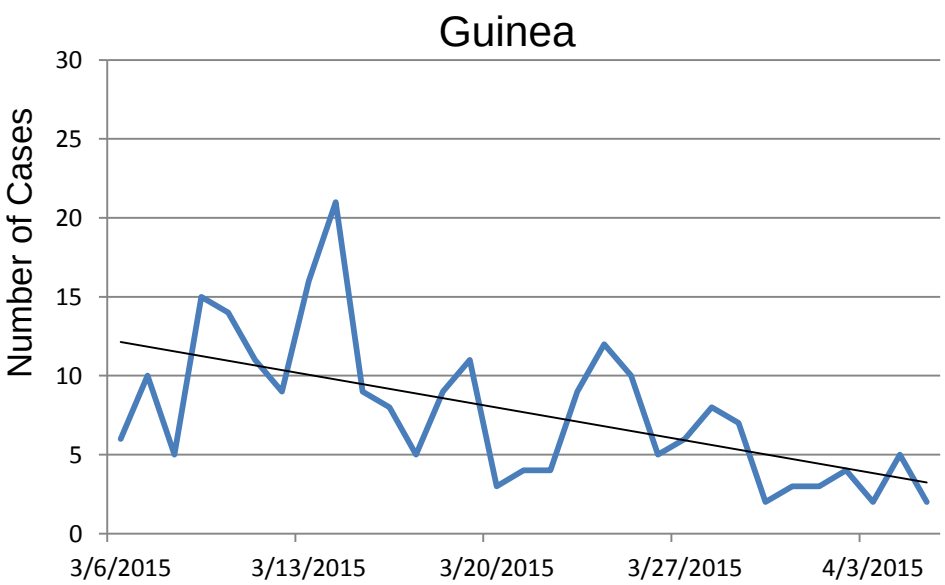
All information has been verified unless noted otherwise. Sources include WHO, and the Guinea, Liberia, and Sierra Leone Ministries of Health.

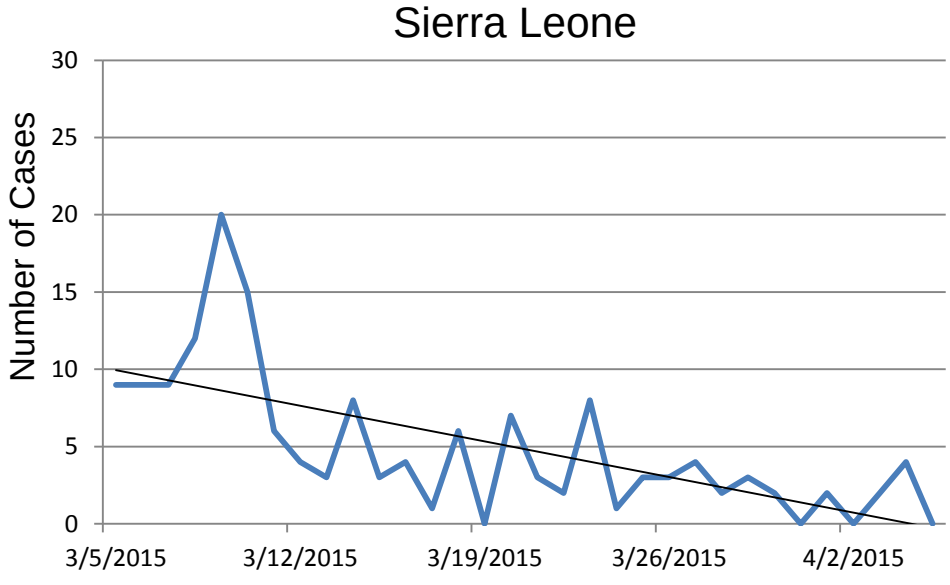
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Daily Reported Confirmed EVD Cases, with Trend Line, for Guinea, Liberia, and Sierra Leone







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Additional Resources and Media Reports

Ebola Web Sites

- WHO
- WHO (Africa)
- CDC
- UNMEER Sit Reps
- Liberia MOH
- Sierra Leone MOH
- Humanitarian Response (West Africa)
  Access to MOH, WHO, UN, and other reports
- AFHSC Guidelines for Detecting and Reporting DoD Cases of Ebola Virus
- USAMRIID
- State Department Travel Site
- USAID Ebola Site
- DoD News
- DoD Operation United Assistance Web Portal
- AFRICOM Operation United Assistance Web Portal

Information and News

- Two new Ebola vaccines pass important early test, researchers say (NY Times, 8 APR)
- Sierra Leone says Kailahun Ebola case report was mistaken (Reuters, 7 APR)
- Guinea may provide answers on Ebola vaccine (GlobalNews, 7 APR)
- Yes, we were warned about Ebola (The NY Times, 7 APR)
- An Ebola doctor's answer to life-or-death question of who to admit for treatment (Washington Post, 6 APR)
- Dallas hospital seeks dismissal of nurse's suit over Ebola (Fox News, 6 APR)
- Merck, NewLink Ebola vaccine appears safe, effective in new studies (Reuters, 1 APR)
- Guinea finds three Ebola cases in the alumina hub of Fria (Reuters, 31 MAR)
- Sierra Leone Ebola lockdown exposes hundreds of suspected cases (Fox News, 31 MAR)
- Ebola virus: Sexual contact may be causing it to spread, WHO says (ABC, 31 MAR)
- Guinea: gov't declares 45-day Ebola 'health emergency' (AllAfrica.com 29 MAR)
- Military healthcare worker Cpl Anna Cross free of Ebola (BBC, 28 MAR)
- NIH study finds no evidence of accelerated Ebola virus evolution in West Africa (NIH, 26 MAR)