Health & Medicine | Jul 9, 2026 | 9 min read | By Bryan White

The Fastest-Growing Filovirus Outbreak: Inside the 2026 Ebola Crisis

Biology * Public Health * Urban Environment

Introduction: The 2026 Bundibugyo Ebolavirus Emergency and Regional Spillover Context

On May 17, 2026, the World Health Organization (WHO) declared a Public Health Emergency of International Concern (PHEIC) following a high-mortality viral hemorrhagic fever epidemic across the Democratic Republic of the Congo (DRC) and Uganda[1][3][4]. The etiologic agent, Bundibugyo virus (BDBV; Orthoebolavirus bundibugyoense), is a filovirus lacking licensed vaccines or approved targeted therapeutics[1][9][10]. Marking the DRC's 17th Ebola outbreak since 1976, the epidemic unfolded amid eastern DRC conflict and displacement, reaching ~1,780 confirmed cases and ~602 deaths by early July 2026 -- the third-largest Ebola outbreak and fastest-growing filovirus epidemic in history[2][5][17]. Previously recorded only in 2007 in western Uganda (~34% CFR) and 2012 in Isiro, DRC, BDBV re-emerged alongside the late-2025 Kasai Zaire ebolavirus outbreak (64 cases, 45 deaths) and Marburg outbreaks in Uganda and Ethiopia[7][9][11][13]. Although surveillance funding cuts delayed detection[6], the crisis mobilized in-field genomic evolution tracking, epidemiological modeling, and the adaptive PARTNERS trial[7][8].

Spatiotemporal Epidemiology, R0 Dynamics, and Surveillance

The earliest retrospective hemorrhagic case presented on April 24, 2026, in the mining town of Mongbwalu, Ituri Province, after weeks of cryptic spread masked by symptoms resembling endemic malaria and typhoid and low (~10%) overt hemorrhage[2][11][15]. Following a May 5 alert, Kinshasa's INRB confirmed BDBV on May 14 via pan-filovirus RT-PCR after Zaire-specific GeneXpert assays returned false negatives[2][7][16].

| Geographic Location | | Confirmed Cases | | Confirmed Deaths | | Case Fatality Rate (CFR) | | Epidemiological Context |

| Ituri Province, DRC | | 1,601 | | 511 | | 31.9% | | Primary epicenter across 25 of 36 health zones[2]. |

| North Kivu, DRC | | 155 | | 88 | | 56.8% | | Secondary epicenter amid conflict and displacement[2]. |

| South Kivu, DRC | | 3 | | 1 | | 33.3% | | Limited localized transmission[2]. |

| Tshopo Province, DRC | | 2 (Suspected) | | Pending | | N/A | | Kisangani cases linked to Nia-Nia health zone[16]. |

| Kampala/Wakiso, Uganda | | 20 | | 2 | | 10.0% | | Cross-border cluster with nosocomial transmission[5]. |

| France | | 1 | | 0 | | 0.0% | | Medically evacuated physician from the DRC[3]. |

| Global Cumulative | | ~1,780 | | ~602 | | ~33.8% | | Third-largest Ebola outbreak globally[2]. |

Branching-process models estimated the basic reproduction number (R0) at 1.31-1.55 with an 11.7-day doubling time (95% HPD: 6.8-17.5 days)[14][19]. Spread was amplified by nosocomial infections (>100 healthcare workers, 25 deaths) and post-mortem funeral contact, as 93% (400/430) of early investigated deaths occurred in the community[4][17][20]. On July 2, 2026, the WHO granted Emergency Use Listing (EUL) to the first BDBV-specific molecular assay alongside border exit screening[4][21].

Molecular Virology, NPC1 Entry, and Comparative Pathogenesis

BDBV possesses an ~18.9 kb linear, negative-sense, single-stranded RNA genome (~42% guanine-cytosine content) encoding seven structural proteins and edited non-structural glycoproteins[23][25][26].

| Viral Protein | | Genetic Designation | | Structural and Functional Characteristics | | Reference Implications |

| Nucleoprotein (NP) | | NP | | Forms the helical nucleocapsid core by binding genomic RNA and coordinates ribonucleoprotein (RNP) replication. | | [23][25][27] |

| Polymerase Cofactor (VP35) | | VP35 | | Essential polymerase cofactor; binds dsRNA to inhibit RIG-I-like receptors and type I interferon (IRF3/IRF7) induction. | | [25][27][28] |

| Matrix Protein (VP40) | | VP40 | | Coordinates plasma-membrane viral assembly, budding, and transcriptional regulation. | | [25][27][28] |

| Glycoprotein (GP) | | GP | | Class I fusion trimer cleaved into GP1 (attachment) and GP2 (fusion); primary neutralizing antibody target. | | [25][27][29] |

| Secreted Glycoproteins (sGP, ssGP) | | GP (edited) | | Soluble non-structural proteins secreted from infected cells as antibody-absorbing immunological decoys. | | [25][27][28] |

| Transcriptional Activator (VP30) | | VP30 | | Minor nucleoprotein essential for viral mRNA transcription initiation. | | [25][27] |

| Membrane-Associated Protein (VP24) | | VP24 | | Binds host karyopherin- to block nuclear import of phosphorylated STAT1, paralyzing interferon signaling. | | [23][27] |

| Large Protein (L) | | L | | Viral RNA-dependent RNA polymerase catalyzing mRNA transcription and full-length genome replication. | | [23][25][27] |

Following TIM-1/lectin attachment and uptake via macropinocytosis or clathrin-mediated endocytosis, endolysosomal cathepsin proteases cleave the GP1 glycan cap and mucin-like domain (MLD), exposing the receptor-binding domain to engage the Niemann-Pick C1 (NPC1) cholesterol transporter and trigger GP2 internal fusion loop (IFL) insertion into the endosomal membrane, releasing the RNP into the cytoplasm[24][29]. Compared to Zaire ebolavirus in human peripheral blood

mononuclear cells, BDBV replicates 1-2 logs lower and induces 2- to 10-fold lower proinflammatory cytokines (TNF- , MCP-1, IL-1 , MIP-1 , IL-10) and slower macrophage death -- explaining its ~34% CFR but prolonging infectious mobility[12][31][32].

Genomic Phylodynamics and the Molecular Clock

Oxford Nanopore MinION sequencing and ARTIC workflows mapped to the 2007 Butalya reference (NC_014373.1) showed the 2026 lineage forms a distinct monophyletic clade separated from 2007 and 2012 strains, confirming a de novo zoonotic spillover[7][14][22]. Bayesian molecular clock models estimated a rate of 1.10-1.12 x 10-3 substitutions/site/year, placing the tMRCA in mid-March 2026 (95% HPD: early February to mid-April)[19]. Across 23 early SNPs, non-synonymous amino acid substitutions clustered in the GP mucin-like domain (GP:P365S, GP:P367L, GP:P389L, GP:R394G) alongside L-gene mutation T18905G, under strong purifying selection[14][27][33].

Adaptive Clinical Trials: Remdesivir, MBP134AF, and Obeldesivir PEP

Because licensed Zaire countermeasures (Ervebo, Inmazeb, Ebanga) lack cross-protection against BDBV and rVSV/ChAdOx BDBV vaccine candidates remain months from Phase 1 trials[12][34], the WHO, INRB, ITM Antwerp, and Oxford launched the adaptive randomized PARTNERS trial on July 2, 2026, alongside the EBO-PEP prophylaxis platform[8][35][36]:

* Remdesivir: An adenosine triphosphate (ATP) prodrug analog that induces delayed chain termination in the conserved filovirus L RNA polymerase[11][34][37].

* MBP134AF: A pan-ebolavirus cocktail of two survivor-derived human IgG1 monoclonal antibodies (ADI-15878 and affinity-matured ADI-23774)[38][39][40]. Resolved by cryogenic electron microscopy, ADI-15878 locks the conserved GP2 internal fusion loop and HR1 protomer interface, while Fc afucosylation enhances Fc RIIIa binding on Natural Killer cells to drive antibody-dependent cellular cytotoxicity (ADCC), reversing lethal NHP BDBV challenge in a single dose[29][30][40].

* Obeldesivir (ODV) and Galidesivir: Evaluated in EBO-PEP, oral obeldesivir models project a >64% reduction in healthcare-worker mortality at 80% efficacy and coverage, complemented by compassionate-use MEURI clearance for galidesivir in Uganda[18][35][41].

Conclusion: Frontline Bottlenecks and Global Health Security

Despite rapid sequencing and trials, containment in Ituri and North Kivu was hindered by strikes among unpaid responders lacking PPE, armed conflict across two million displaced residents, arson attacks on treatment centers, and prior USAID surveillance cuts[2][6][38][42][43]. Halting the 2026 Bundibugyo crisis requires pairing pan-filovirus immunotherapeutics like MBP134AF with sustained frontline operational financing.

Updates... (Nov 20, 2026): By November 15, 2026 (data reported through November 14), cumulative DRC Bundibugyo virus disease cases reached 11,376 confirmed infections and 5,568 deaths across eight affected provinces.[1][16] Uganda's secondary outbreak was officially declared ended on August 27, 2026 (21 confirmed and probable cases, 3

deaths), while October imported clusters in Kenya (9 confirmed cases, 2 deaths) and Nigeria (1 imported case medically evacuated to Switzerland) completed contact monitoring in November without sustained community transmission.[5][16] On November 4, 2026, WHO independent advisory experts also recommended adding two Bundibugyo-specific candidate vaccines -- University of Oxford/Serum Institute of India's ChAdOx1 and Moderna's mRNA-1469 -- to the DRC Tumaini clinical trial.[44]

References

* World Health Organization (WHO) (Nov 13, 2026). Ebola outbreak - DRC 2026. https://www.who.int/emergencies/situations/ebola-outbreak---drc-2026

* Wikipedia (May 15, 2026; updated Nov 2026). 2026 Ebola epidemic. https://en.wikipedia.org/wiki/2026_Ebola_epidemic

* WHO Regional Office for Africa (Sep 22, 2026). Ongoing outbreak in the Democratic Republic of the Congo. https://www.afro.who.int/health-topics/ebola-disease/outbreak-drc-26

* World Health Organization (WHO) (May 17, 2026). Epidemic of Ebola Disease caused by Bundibugyo virus in the Democratic Republic of the Congo and Uganda determined a public health emergency of international concern. https://www.who.int/news/item/17-05-2026-epidemic-of-ebola-disease-in-the-democratic-republic-of-the-congo-and-uganda-determ

* U.S. Centers for Disease Control and Prevention (CDC) (Nov 19, 2026). Ebola Outbreak: Current Situation. https://www.cdc.gov/ebola/situation-summary/index.html

* The Guardian (Jul 7, 2026). What will define Elon Musk's legacy? Doge cuts to USAID Ebola programs. https://www.theguardian.com/technology/2026/jul/07/elon-musk-doge-cuts-usaid-ebola

* Virological.org (May 18, 2026). Initial genomes from May 2026 Bundibugyo Virus Disease Outbreak in the Democratic Republic of the Congo and Uganda. https://virological.org/t/initial-genomes-from-may-2026-bundibugyo-virus-disease-outbreak-in-the-democratic-republic-of-the-congo

* World Health Organization (WHO) (Jul 2, 2026). Patient enrolment begins in a scientific trial to identify the first effective treatments for Bundibugyo virus disease. https://www.who.int/news/item/02-07-2026-patient-enrolment-begins-in-a-scientific-trial-to-identify-the-first-effective-treatments-fo

* Wikipedia (Sep 10, 2011; updated 2026). Bundibugyo ebolavirus. https://en.wikipedia.org/wiki/Bundibugyo_ebolavirus

* Kopp, E., et al. (Jun 10, 2026). Bundibugyo Virus Disease: Diagnostics and Medical Countermeasures for a Neglected Ebolavirus. Preprints.org. https://doi.org/10.20944/preprints202606.0743.v1

* CIDRAP (Jun 24, 2026). WHO announces 2 trials of experimental drugs in Ebola outbreak. https://www.cidrap.umn.edu/ebola/who-announces-2-trials-experimental-drugs-ebola-outbreak

* PBS News (May 27, 2026). What to know about the Bundibugyo virus, form of Ebola causing an outbreak in Congo. https://www.pbs.org/newshour/health/what-to-know-about-the-bundibugyo-virus-form-of-ebola-causing-an-outbreak-in-congo

* UK Health Security Agency / GOV.UK (Mar 23, 2014; updated 2026). Ebola and Marburg haemorrhagic fevers: outbreaks and case locations. https://www.gov.uk/guidance/ebola-and-marburg-haemorrhagic-fevers-outbreaks-and-case-locations

* Virological.org (Jun 4, 2026). Molecular evolutionary analysis of the current Bundibugyo virus disease outbreak in DRC and Uganda. https://virological.org/t/molecular-evolutionary-analysis-of-the-current-bundibugyo-virus-disease-outbreak-in-drc-and-uganda/1042

* World Vision (Nov 18, 2026). 2026 Ebola virus outbreak: Facts, FAQs, and how to help. https://www.worldvision.org/health-news-stories/2014-ebola-virus-outbreak-facts

* European Centre for Disease Prevention and Control (ECDC) (Nov 16, 2026). Ebola disease: Multi-country outbreak 2026. https://www.ecdc.europa.eu/en/ebola-outbreak-democratic-republic-congo-and-uganda

* Anadolu Agency (Jul 9, 2026). Ebola death toll hits 600 in DR Congo as virus reported in new province. https://www.aa.com.tr/en/africa/ebola-death-toll-hits-600-in-dr-congo-as-virus-reported-in-new-province/3992905

* medRxiv (Jul 1, 2026). Evaluating the impact of antiviral post-exposure prophylaxis for health-care workers during ebolavirus outbreaks: a modelling study. https://www.medrxiv.org/content/10.64898/2026.06.26.26356717v1.full-text

* Virological.org (Jul 9, 2026). Genomic epidemiology of the ongoing 2026 Bundibugyo Virus Disease outbreak in the Democratic Republic of the Congo. https://virological.org/t/genomic-epidemiology-of-the-ongoing-2026-bundibugyo-virus-disease-outbreak-in-the-democratic-republic-

* Infection Control Today (Jul 6, 2026). When Caregivers Become Patients: Frontline Vulnerability in the Bundibugyo Outbreak Response. https://www.infectioncontroltoday.com/view/when-caregivers-become-patients-frontline-vulnerability-bundibugyo-outbreak-respons

* World Health Organization (WHO) (Jul 2, 2026). WHO adds first diagnostic test for Ebola Bundibugyo virus to its Emergency Use Listing. https://www.who.int/news/item/02-07-2026-who-adds-first-diagnostic-test-for-ebola-bundibugyo-virus-to-its-emergency-use-listing

* Science Media Centre (May 19, 2026). Expert reaction to initial genomes of the Bundibugyo virus from the outbreak in the Democratic Republic of the Congo and Uganda. https://www.sciencemediacentre.org/expert-reaction-to-initial-genomes-of-the-bundibugyo-virus-from-the-outbreak-in-the-democrat

* Zheng, H., et al. (Jun 2015). Ebolavirus Classification Based on Natural Vectors. DNA and Cell Biology, 34(6), 418-428. https://doi.org/10.1089/dna.2014.2678

* Public Health Agency of Canada (Sep 17, 2001; updated 2023). Orthoebolaviruses: Infectious substances pathogen safety data sheet. https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/ebola

* International Committee on Taxonomy of Viruses (ICTV) (2023). Filoviridae: Genus Orthoebolavirus. https://ictv.global/report/chapter/filoviridae/filoviridae/orthoebolavirus

* Swiss Institute of Bioinformatics / ViralZone (Apr 18, 2012). Orthoebolavirus. https://viralzone.expasy.org/207

* Public Health Ontario (2026). Genomic Epidemiology and Molecular Characteristics

of Bundibugyo Virus.
https://www.publichealthontario.ca/-/media/Documents/B/26/bundibugyo-virus-genomic-epidemiology-molecular-characteristics.pd

* UniProt (2008; updated 2026). Bundibugyo virus (Taxonomy ID 565995).
https://www.uniprot.org/taxonomy/565995

* Murin, C. D. (Jan 10, 2022). Structural Biology Illuminates Molecular Determinants of Broad Ebolavirus Neutralization by Human Antibodies for Pan-Ebolavirus Therapeutic Development. Frontiers in Immunology, 12, 808047.
https://doi.org/10.3389/fimmu.2021.808047

* Murin, C. D., et al. (Sep 4, 2018). Structural Basis of Pan-Ebolavirus Neutralization by an Antibody Targeting the Glycoprotein Fusion Loop. Cell Reports, 24(10), 2723-2732.e4. https://doi.org/10.1016/j.celrep.2018.08.009

* Levine, H. A., et al. (Sep 27, 2021). Comparison of Zaire and Bundibugyo Ebolavirus Polymerase Complexes and Susceptibility to Antivirals through a Newly Developed Bundibugyo Minigenome System. Journal of Virology, 95(20), e00643-21.
https://doi.org/10.1128/jvi.00643-21

* Gupta, M., et al. (Jun 20, 2010). Reduced virus replication, proinflammatory cytokine production, and delayed macrophage cell death in human PBMCs infected with the newly discovered Bundibugyo ebolavirus relative to Zaire ebolavirus. Virology, 402(1), 203-208. https://doi.org/10.1016/j.virol.2010.03.024

* Mvumbi, G. L., et al. (May 27, 2026). A Constrained-Evolution Hypothesis for the 2026 Bundibugyo Ebolavirus Outbreak in the Democratic Republic of the Congo: Predictable Mutational Pathways, Diagnostic Fragility, and Short-Horizon Epidemic Trajectories. Preprints.org. https://doi.org/10.20944/preprints202605.1844.v1

* Nachega, J. B., et al. (Jun 4, 2026). Therapeutic and prophylactic strategies for Ebola caused by Bundibugyo virus. Nature Reviews Drug Discovery.
https://doi.org/10.1038/d41573-026-00094-6

* ClinicalTrials.Veeva (Sep 1, 2026). EBOla Post-Exposure Prophylaxis (EBO-PEP).
https://ctv.veeva.com/study/ebola-post-exposure-prophylaxis

* World Health Organization (WHO) (Jan 21, 2025). PARTNERS - Platform adaptive randomized trial for new and repurposed Filovirus treatments - Core Trial Protocol.
https://www.who.int/publications/m/item/partners-platform-adaptive-randomized-trial-for-new-and-repurpose-filovirus-treatments-c

* Medical News Today (Jul 7, 2026). Ebola: Treatments, vaccine trials for unchallenged viral strain begin.
https://www.medicalnewstoday.com/articles/ebola-treatment-clinical-trial-bundibugyo-virus-3-questions

* CIDRAP (Jul 2, 2026). Clinical trial for Ebola therapies begins in DR Congo.
https://www.cidrap.umn.edu/ebola/clinical-trial-ebola-therapies-begins-dr-congo

* Mapp Biopharmaceutical, Inc. (Jul 3, 2024). Frequently Asked Questions - Bundibugyo and MBP134.
https://mappbio.com/frequently-asked-questions-bundibugyo-and-mbp134/

* Wec, A. Z., et al. (Jan 9, 2019). Development of a human antibody cocktail that deploys multiple functions to confer pan-ebolavirus protection. Cell Host & Microbe, 25(1), 39-48.e5. https://doi.org/10.1016/j.chom.2018.12.004

* CBRNe World (Jul 7, 2026). Galidesivir cleared for use in Bundibugyo Ebola epidemic. https://cbrneworld.com/news/galidesivir-cleared-for-use-in-bundibugyo-ebola-epidemic

* The Times of India (Jul 6, 2026). DR Congo's Ebola outbreak claims 506 lives, cases reach 1,561. https://timesofindia.indiatimes.com/world/rest-of-world/dr-congos-ebola-outbreak-claims-506-lives-cases-reach-1561/articleshow/13

* The Washington Post (Jul 9, 2026). Health workers fighting Ebola go on strike after months without pay. https://www.washingtonpost.com/world/2026/07/09/congo-health-workers-fighting-ebola-go-strike-after-months-without-pay/

* World Health Organization (WHO) (Nov 4, 2026). Two new candidate vaccines to join Ebola trial as treatment research advances. https://www.who.int/news/item/04-11-2026-two-new-candidate-vaccines-to-join-ebola-trial-as-treatment-research-advances