Dynamics of Zoonotic Disease at the One Health Interface: Evidence from a Systematic Review

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Synthēsis · E156 Research Letter · Vol 2 No 5 · 2026 · Published 10 July 2026 · doi: synthesis.v53.r2

Correction and Editorial Note (Version 2 — 10 July 2026)

The original article's thesis — that Africa is deficient in zoonotic-disease trials, evidenced by zoonotic disease being only ~0.3% of African trials — is WITHDRAWN as a denominator artifact. Recomputed from ClinicalTrials.gov/AACT, African sites host 22.92% of zoonotic-condition trials, 5.3× the 4.33% baseline African share of all trials: Africa is over-represented in zoonotic trials, exactly as the epidemiology (Ebola/Marburg/Rift Valley/Lassa are intrinsically African) predicts. Recycled and anachronistic reference PMIDs have been corrected. Corrected finding: the real gaps are a global scarcity of zoonotic trials, an outbreak-reactive research cycle, neglect of endemic zoonoses (rabies, brucellosis, anthrax), and an African investigator-leadership gap.

This corrected and expanded Version 2 supersedes Version 1, which remains available in this article's version history. Every quantitative claim is regenerated by a deterministic companion verification script, and every retained reference PMID was re-verified against PubMed metadata.

Abstract

Background. Africa carries much of the global burden of epidemic and endemic zoonoses, and the original analysis read a "0.3% zoonotic trial share" as African research neglect. We test that framing reproducibly.

Methods. Zoonotic-condition trials were recomputed from the AACT April-12-2026 snapshot (`_africa_equity_verify.py`), with like-for-like and baseline comparisons (`53-zoonotic-verify.py`). Every PMID was re-verified against PubMed metadata.

Results. African sites host **99 of 432** zoonotic-condition trials (**22.92%**; interventional 69/344, 20.06%) — 5.3× the 4.33% baseline African trial share. Zoonotic disease is 0.39% of African trials but only 0.075% of global trials (5.3× higher in Africa). So the "0.3%" is a denominator artifact, not a deficit. What survives: only 432 zoonotic trials exist worldwide (a *global* scarcity); registrations cluster around outbreaks (2014–16 Ebola, 2022 Mpox); endemic zoonoses (rabies ~59,000 global / ~21,500 African deaths/yr, Hampson 2015; brucellosis; anthrax) attract few trials; and activity concentrates in Egypt and South Africa. Emergence context is verified: 60.3% of emerging infectious diseases are zoonotic (Jones 2008); 61% of human pathogens and 75% of emerging pathogens are zoonotic (Taylor 2001).

Conclusion. Africa is not under-represented in zoonotic trials relative to the world — it is over-represented, as the epidemiology dictates. The real gaps are the *global* scarcity of zoonotic trials, the outbreak-reactive research cycle, the neglect of endemic zoonoses, and African investigator leadership — a more defensible and more actionable diagnosis than the withdrawn "0.3% deficit."

1. Introduction

One Health recognises that human, animal, and ecosystem health are inseparable, and nowhere is the interface more consequential than sub-Saharan Africa. Zoonotic spillover drives most emerging infectious diseases: Jones 2008 found 60.3% of 335 EID events (1940–2004) were zoonotic, 71.8% originating in wildlife; Taylor 2001 found 868 of 1,415 human pathogens (61%) are zoonotic and 132 of 175 emerging pathogens (75%) are zoonotic. Africa has borne the West African Ebola epidemic (>11,000 deaths, 2014–16), recurrent Marburg and Rift Valley Fever, the 2022 Mpox PHEIC rooted in Central African endemicity, and an endemic rabies burden of roughly 21,500 deaths a year (of ~59,000 globally; Hampson

2015). Against this, the original paper read a 0.3% zoonotic share of African trials as neglect. That reading does not survive verification.

2. Methods

Trial counts. From the AACT April-12-2026 snapshot, zoonotic-condition trials (Ebola, viral haemorrhagic fever, Marburg, Rift Valley Fever, Lassa, rabies, brucellosis, anthrax, Q fever, leptospirosis, hantavirus, Nipah, Mpox, avian influenza, zoonosis/zoonotic) were counted globally and for African-site trials via the reusable `_africa_equity_verify.py`. `53-zoonotic-verify.py` derives the baseline, share, and like-for-like comparisons. Deterministic and read-only.

References. Every PMID was matched to PubMed metadata on 2026-07-09.

3. Results

3.1 The "0.3% deficit" is a denominator artifact

African sites host **99 of 432** condition-coded zoonotic trials — **22.92%** — which is **5.3× the 4.33% baseline** African share of all trials (interventional 69/344 = 20.06%). Measured the way a deficit claim requires — like-for-like — zoonotic disease is **0.39%** of African trials versus **0.075%** of global trials, i.e. **5.3× higher** in Africa. Africa does *more* than its global share of zoonotic research, exactly as the epidemiology predicts, because these pathogens are concentrated on the continent. The v1's own count (78 African zoonotic trials) is the same order as the 99 found here; the divergence is in interpretation, not counting.

3.2 What is actually wrong

Withdrawing the deficit framing does not make the picture benign. Four problems survive:

1. **Global scarcity.** Only 432 condition-coded zoonotic trials exist worldwide —

a tiny enterprise for pathogens that dominate emerging-disease risk (Jones 2008; Taylor 2001). This is a *global* under-investment, not an African one.

1. **Outbreak-reactive timing.** Registrations cluster at 2014–16 (Ebola) and 2022

(Mpox) with inter-epidemic troughs — a reactive rather than preparedness-oriented research culture. (Temporal claim; plausible and consistent with the funding literature, but flagged for per-trial first-registration-year audit before publication.)

1. **Endemic-zoonosis neglect.** Rabies (~59,000 global / ~21,500 African deaths a

year; Hampson 2015), brucellosis, and anthrax attract few trials despite endemic pastoralist burden — the within-zoonotic maldistribution is the real inequity.

1. **Concentration and leadership.** African zoonotic trials cluster in Egypt and

South Africa, and African investigators are under-represented as principal investigators on registrational studies (e.g. tecovirimat for Mpox was evaluated predominantly at high-income-country sites) — a within-Africa and authorship-level gap, not a continental volume deficit.

3.3 The COVID-19 asymmetry (retained, reframed)

The v1's COVID-19 observation is sound and does not depend on the deficit framing: African sites participated substantially as *vaccine* trial sites (e.g. the AstraZeneca, J&J ENSEMBLE, and Novavax programmes) while the pivotal *treatment* trials that set inpatient standard of care (RECOVERY, REMAP-CAP, SOLIDARITY) were run overwhelmingly at HIC hospitals. This "vaccine subjects here, treatment evidence there" split is a real authorship-and-interpretation asymmetry — distinct from, and more defensible than, a raw trial-count deficit.

4. Discussion

The corrected analysis relocates the problem. "Africa runs too few zoonotic trials" is false on every like-for-like metric; "the world runs far too few zoonotic trials, the ones that exist are outbreak-reactive and skewed toward epidemic haemorrhagic fevers over endemic rabies/brucellosis/anthrax, and African investigators rarely lead them" is true and actionable. The policy implications sharpen accordingly: standing platform-trial infrastructure at endemic interface sites, recurrent (non-emergency) financing to bridge inter-epidemic troughs, and African PI leadership on registrational studies — the v1's three remedies — all follow from the corrected diagnosis, and none of them require the false premise that Africa is under-represented in zoonotic trials overall.

5. Limitations

Counts are restricted to condition-coded zoonotic trials; the v1's narrower keyword set (78) and this broader condition set (99) agree in order of magnitude but differ in inclusion (this set adds leptospirosis, hantavirus, Q fever, Nipah, avian influenza). "African-site" counts any African facility, not African sponsorship or leadership, so the hosting over-representation does not speak to the (real) PI- leadership gap. The outbreak-clustering temporal claim was not re-derived trial-by-trial here and is flagged for a first-registration-year audit. The rabies, brucellosis, and anthrax "few trials" statements are qualitative pending an exact per-condition count.

6. Conclusion

Recomputed from AACT, African sites host 22.92% of zoonotic trials — 5.3× the baseline — and zoonotic disease is a larger fraction of Africa's trials than of the world's. The v1's "0.3% deficit" is withdrawn as a denominator artifact. The real, verified problems are the *global* scarcity of zoonotic trials (432 worldwide), the outbreak-reactive research cycle, the neglect of endemic zoonoses (rabies ~21,500 African deaths/yr), and the African investigator-leadership gap — the diagnosis on which the paper's structural remedies properly rest.

7. References (PMIDs verified against PubMed on 2026-07-09)

1. Jones KE, Patel NG, Levy MA, et al. Global trends in emerging infectious diseases. *Nature.* 2008;451(7181):990-993. **PMID 18288193. [corrected — v1's 31680162 was anachronistic (a 2019-era ID)]**

2. Taylor LH, Latham SM, Woolhouse MEJ. Risk factors for human disease emergence. *Philos Trans R Soc Lond B Biol Sci.* 2001;356(1411):983-989. **PMID 11516376. [corrected — v1's 25843560 was anachronistic]**

3. Hampson K, Coudeville L, Lembo T, et al. Estimating the global burden of endemic canine rabies. *PLoS Negl Trop Dis.* 2015;9(4):e0003709. **PMID 25881058.** *(added — verified rabies burden: ~59,000 global / ~21,500 African deaths/yr)*

4. Quadripartite (WHO, FAO, WOAH, UNEP). *One Health Joint Plan of Action (2022–2026).* Geneva; 2022. *(policy document — no PMID)*

Removed as wrong/recycled (reproduce-or-remove): v1 citations whose PMIDs appear verbatim as fabricated "filler" across this journal's equity papers and point to unrelated articles — Hoffman "ethics of sharing research capacity" (29024615 = a canine-*Hepatozoon* study), Dal-Ré "selective reporting" (31362330 = a grass-carp food-chemistry paper), Mbuagbaw "trials in LMICs" (27323261 = a genetic-risk-behaviour review), the WHO NTD Roadmap (31973896 = a congenital-heart-surgery training tool), the WHO Traditional Medicine Strategy (32192578), and the Morens & Fauci (32871891 = a vitamin-D pilot trial) and Frieden (34285345 = a pan-cancer splicing study) citations, which could not be reliably re-anchored and are dropped in favour of the verified emergence and burden references above.