Poliovirus surveillance in West, Central and East Africa post-certification: A structured narrative review — by Wankpaouyare Gmakouba et al

Supplementary Table S1: Individual characteristics of the 29 empirical reports

Source and setting	Design	Study or specimen period	Main finding or contribution	Key interpretation limit
Membo et al. [7] DRC	Retrospective descriptive national AFP analysis	2008–2014	National AFP trends coexisted with provincial disparities.	Pre-certification routine records; incomplete reporting and no estimate of present-day performance.
Tegegne et al. [8] Ethiopia	Retrospective descriptive AFP analysis	2005–2015	National indicators improved while subnational and pastoralist-region gaps persisted.	Routine historical data; findings do not measure a post-certification change.
Tegegne et al. [9] South Sudan	Retrospective descriptive national AFP analysis	2014–2019	National benchmarks concealed state variation; the database included an iVDPV2 case.	Routine historical data; a detected iVDPV case does not evaluate targeted immunodeficiency surveillance.
Odoom et al. [10] Ghana	Descriptive environmental outbreak investigation	2019 investigation	cVDPV2 was detected in wastewater without an AFP case identified in the investigated setting.	One outbreak setting; no estimate of population-wide sensitivity or attributable impact.
Obodai et al. [11] Ghana	Retrospective indicator-based environmental evaluation	2018–2022	Environmental performance and virus detections were assessed across seven regions.	Selected catchments and routine sampling data; negative samples do not establish absence elsewhere.
Abalo et al. [12] Niger	Descriptive cross-sectional evaluation with historical comparison	Records 2017–2021; implementation 2020–2021	Community reporting reached selected insecure districts and higher AFP reporting accompanied implementation.	Non-random programme placement and concurrent changes; improved reporting is not a causal effect estimate.
Ticha et al. [13] Eight African countries in the three subregions	Observational AVADAR implementation evaluation	Aug 2017–Jul 2018	24,142/25,032 alerts (96.44%) were investigated and 1,414 verified AFP cases were reported.	Purposively selected high-risk districts; alert yield is not population sensitivity or an unconfounded effect.

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Tegegne et al. [14] South Sudan	Retrospective AVADAR implementation comparison	Jun 2018–Dec 2019	AVADAR contributed additional verified AFP notifications in three pilot counties.	Selected counties and non-random comparisons; costs and long-term sustainability were not established.
Tushabe et al. [15] Uganda	Descriptive environmental virological investigation	2021 detections	Wastewater sampling detected cVDPV2 without corresponding AFP detection.	Few detections and selected catchments; incremental population sensitivity was not estimated.
Zhou et al. [16] Nairobi Kenya	Paired environmental-sampling feasibility study	Apr–Sep 2015	Bag-mediated filtration was feasible for recovering polioviruses in sampled wastewater.	Method and assay-volume differences; Sabin-virus recovery is not outbreak-prevention effectiveness.
Fagnant-Sperati et al. [17] Nairobi Kenya	Paired sampling-method validation study	Sep 2015–Feb 2017	Filtration and two-phase concentration differed in detection of sampled virus types.	Four sites and laboratory-method endpoints; does not measure community surveillance sensitivity.
Kèbè et al. [18] Guinea	Single-sample genome report	Jan 2021 specimen	Astrovirus sequence recovered from an AFP specimen illustrated broader diagnostic use of the platform.	Non-polio finding from one child; neither AFP causation nor poliovirus detection performance established.
Ndiaye et al. [19] North and West Africa	Molecular analysis of AFP and environmental isolates	2013–2023	Echovirus 11 sequences illustrated broader laboratory and specimen-network capacity.	Selected non-polio isolates; geographic scope extends beyond the target subregions.
Drabo et al. [20] Burkina Faso	Cross-sectional information-management evaluation	Calendar period not established from the verified abstract	Notification and laboratory-feedback processes had logistical and information-management weaknesses.	Local assessment; calendar period and full appraisal not established from the accessible abstract.
Gmakouba et al. [21] Togo	Cross-sectional records and staff assessment	Calendar period not stated in the verified report	Ogou surveillance records and interviews identified delayed feedback and documentation weaknesses.	Small local sample; inconsistent site counts and some denominators limit numerical reuse.

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Kijera et al. [22] Ghana	Descriptive mixed-methods surveillance evaluation	Jan 2017–Dec 2021	An average AFP benchmark coexisted with weak specimen-transport timeliness and incomplete reporting.	Single municipality and few reported cases; not a national estimate.
Ofori et al. [23] Ghana	Analytical cross-sectional staff survey and record review	Records Jan 2019–Jun 2022; survey Oct 2022	27/62 staff (43.6%) were linked to facilities meeting both core indicators during their service.	Staff-based denominator; cross-sectional associations do not establish causation.
Goni Dit Alassan et al. [24] Niger	Cross-sectional analysis of retrospective surveillance records	1998–2021	Long-term AFP indicators and laboratory outcomes varied across years and regions.	Long period with system changes and missing-data exclusions; several published denominators differ.
Ishagh et al. [25] Niger	Retrospective national AFP record analysis	2016–2021	Overall indicators masked weaknesses in stool quality, investigation and specimen transport.	Routine reporting and changing access; no controlled assessment of corrective measures.
Mwengee et al. [26] WHO African Region including target subregions	Descriptive multicountry programme and surveillance review	Country programme periods varied	Polio infrastructure supported integrated communicable-disease surveillance functions.	Selected programme documentation; no uniform comparison period or polio-specific causal estimate.
Alleman et al. [27] DRC	Descriptive outbreak, response and genetic analysis	2017–2021	Multiple cVDPV2 emergence groups required joint field and laboratory interpretation.	Outbreak ascertainment depends on detection and sampling; no isolated causal effect of sequencing.
Farra et al. [28] Central African Republic	Retrospective laboratory-based AFP assessment	2013–2014	Surveillance activity and laboratory timeliness were disrupted during conflict.	Observed laboratory submissions may underrepresent areas least accessible during conflict.
Njile et al. [29] Cameroon	Retrospective virological surveillance study	2015–2020	No wild poliovirus was isolated; VDPV2 was detected from Feb 2020, alongside non-polio enteroviruses.	Only sampled AFP cases were represented; negative wild-poliovirus results do not prove complete sensitivity.

Source and setting	Design	Study or specimen period	Main finding or contribution	Key interpretation limit
Wassie et al. [30] Ethiopia	Retrospective reporting-site comparison	2010–2014	Case reporting and investigation differed by facility type; provider coverage required attention.	Missing reporting-site data were excluded; reported cases do not reveal all undetected cases.
Denegetu et al. [31] Southwest Ethiopia	Uncontrolled comparison of surveillance trends	Weeks 1–41 in 2021 and 2022	AFP and measles indicators were higher during the later outbreak-response period.	Short before/after comparison; response effects cannot be separated from concurrent changes.
Kisanga et al. [32] South Sudan	Community-based programme evaluation	Oct 2015–Sep 2017	Community informants extended AFP reporting in conflict-affected areas.	Programme setting and reporting changes limit causal and national generalisation.
Byabamazima et al. [33] East and Southern Africa	Descriptive field and laboratory secondary analysis	2010–2021	VDPV detections were described from AFP, environmental and other specimen sources.	Regional data include countries outside East Africa; ascertainment changed over time.
Cooper et al. [34] 51 African countries including target subregions	Retrospective surveillance-based risk analysis	Post-2016 oral-vaccine withdrawal surveillance	Surveillance and response data supported analyses of conditions associated with cVDPV2 spread.	Model-dependent observational associations; broader African estimates are not target-subregion effects.
Adegoke et al. [35] WHO African Region including target subregions	Descriptive platform implementation report	2019–2023	Migration from Epi Info to DHIS2 documented an information-system implementation pathway.	Platform adoption is not a demonstrated reduction in missed poliovirus cases.

Periods refer to observations or specimen collection, not publication year. Missing calendar dates are not imputed. The limitations are descriptive review judgements rather than formal risk-of-bias grades. Multicountry reports may overlap with national datasets; report counts are not independent participant counts.