

The System That Was Ready:

Africa's Laboratories
on the Front Line of the
Ebola Response



Editor-in-Chief's Note:

This special issue of LabVoice looks at what happens when years of quiet investment meet a live emergency. As the Democratic Republic of Congo responds to its latest outbreak, Africa's laboratory systems — built over two decades, largely for other diseases entirely — have been tested in real time. In this issue, we trace that story from the continent-wide readiness assessment that predicted exactly where the strengths and gaps would lie, to the mobile laboratories that brought six-hour results to communities that once waited five days, to the point-of-care diagnostics now being evaluated to decentralize testing further still. We close with a different kind of milestone: ASLM's own recommendation for ISO 9001:2015 certification, a reminder that the systems built to serve Africa's laboratories must hold themselves to the same standard of readiness they ask of the field.

Enjoy the read

Nelly Rwenji
Editor-in-Chief, LabVoice

Inside the System That Was Ready: How Years of Quiet Investment Shaped Africa's Ebola Response

Dr Talkmore Maruta

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A suspected Ebola case doesn't announce itself with fanfare. It arrives as a patient with a fever, a health worker's uneasy instinct, and a specimen that needs to move — fast, safely, and to the right place — before anyone can say with certainty what they're dealing with. In the Democratic Republic of Congo's current outbreak, that chain of events has played out many times. And each time, it has depended on something largely invisible to the public: a laboratory system built, tested, and quietly strengthened over twenty years.

Months before this outbreak began, the African Society for Laboratory Medicine (ASLM) completed something like a stress test on

paper — a multi-country assessment of laboratory systems across the continent, designed to answer a deceptively simple question: if an epidemic-prone disease emerged tomorrow, how ready would Africa actually be?

The answer, in hindsight, reads almost like a preview of what was to come. Across 26 countries assessed, every single one had a functioning surveillance system and core diagnostic testing capacity. Nearly nine in ten had dedicated laboratory coordination units. All had laboratory policies and regulatory frameworks on the books. Nearly 3,964 laboratories had been mapped across just fourteen of the countries studied, the majority

sitting at the primary healthcare level — meaning diagnostic reach extends well past capital cities and reference hospitals.

None of this happened by accident. It is the residue of decades of investment aimed originally at other diseases entirely — HIV, tuberculosis, malaria — plus a more recent wave of pandemic-preparedness funding. Laboratory systems built to fight one set of diseases turned out to be exactly the scaffolding needed to respond to another.

When Ebola resurfaced, that scaffolding held. Suspected cases were confirmed rapidly. Surveillance systems flagged and reported them. Trained personnel — many of

whom had been through exactly this kind of mobilization before, in earlier outbreaks or through routine disease programs — were activated rather than recruited from scratch. But the same assessment that documented all of this progress also flagged something else, something less comfortable: capacity is not the same thing as capability.

Having a laboratory is not the same as having a laboratory that can move a specimen across a fragmented referral network in an emergency.

Having a surveillance system is not the same as having one that talks, in real time, to the laboratory information system next door. Having trained staff is not the same as having a surge plan for deploying them when caseloads spike overnight.

The current outbreak has tested exactly those seams — and largely confirmed where they still exist. Specimen referral, workforce surge capacity, digital interoperability between labs and surveillance platforms, and reliable domestic financing were all flagged as weak points before the outbreak began. They remain the areas where the response has had to improvise hardest, patching gaps in real time rather than executing a plan built for exactly this moment.

This is, in one sense, an unusually hopeful story: a continent that invested seriously in public health infrastructure, and is now watching that investment pay dividends in a live emergency.

In another sense, it's a warning delivered twice over — once on paper, and now in practice — that the next phase of that investment has to move beyond bricks, machines, and training certificates, toward the harder, less photogenic work of making all of it function as one system.

Africa did not start this response from zero. But whether it starts the next one from further ahead, or from the same familiar gaps, depends on what happens with that lesson now.



VERIFIED INSTITUTIONAL CHANNELS

EBOLA OUTBREAK REFERENCE HUB

The outbreak of Ebola in the Democratic Republic of the Congo has brought together laboratorians and clinicians from around the world to support crisis management. The reference matrix below offers a structural tool path to monitor historical baselines alongside verified institutional channels.

Our Call to Action

To African Governments: Move beyond project-based investments towards sustainable national ownership of laboratory systems. Integrate laboratory services as core components of national health security strategies, establish predictable domestic financing, strengthen governance and ensure that laboratory networks remain operational between outbreaks — not only during emergencies.

To Development Partners and Financing Institutions: Continue investing in laboratory systems but increasingly prioritize programs that strengthen operational capability rather than infrastructure alone. Investments should support integrated laboratory networks, emergency logistics, digital interoperability, workforce resilience and sustainable institutional capacity that countries can maintain beyond individual donor-funded projects.

To National Public Health Institutes, Ministries of Health and Laboratory Leaders: Shift the focus from expanding individual laboratory capacities to optimizing the performance of the entire laboratory system. Strengthen specimen referral networks, improve interoperability

between laboratory and surveillance systems, institutionalize emergency preparedness exercises and ensure that quality, biosafety and biosecurity are embedded throughout routine laboratory operations. To Regional Institutions, Including Africa CDC and ASLM: Continue strengthening regional collaboration by promoting harmonized standards, workforce development, laboratory networking, quality improvement, biosafety and biosecurity, and coordinated emergency support. Regional mechanisms should increasingly facilitate the sharing of expertise, diagnostics, data and surge capacity so that no country responds to future outbreaks in isolation.

The DRC Ebola outbreak should be viewed as an opportunity to reflect on the maturity of Africa's laboratory systems. It reinforces that sustained investments have established substantial laboratory capacity, while also emphasizing the need to ensure these capacities operate as integrated, resilient systems during emergencies. The next challenge — and opportunity — is to ensure that these investments consistently translate into operational capability that protects lives.

Ultimately, the measure of success will not be the number of laboratories constructed, professionals trained or diagnostic platforms installed. It will be the speed with which countries detect outbreaks, the effectiveness with which laboratory systems support coordinated response, and the resilience of these systems in safeguarding communities against future biological threats.

The next chapter of Africa's laboratory systems must therefore be defined not by building more capacity, but by delivering capability that is integrated, sustainable and ready when it matters most.

More information on ASLM response <https://outbreak.aslm.org/>

<https://www.youtube.com/watch?v=TCCbAxpHTpA>

<https://www.youtube.com/watch?v=uRShOJFYITA>

When an Outbreak Hits, the Laboratory Moves Closer

Nuru Ngailo
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When an outbreak reaches a community, waiting four or five days for a laboratory result can feel like an eternity.

For communities in Kasenyi and Tchomia in the Democratic Republic of Congo (DRC), this was a reality during the Bundibugyo virus disease (BVD) outbreak. Samples from suspected cases were being referred to Bunia for testing, creating delays at a time when health teams needed answers quickly.

The response was simple in concept, but significant in impact: bring the laboratory closer to where it was needed. With support from Africa CDC and ASLM, two mobile laboratories were deployed to

Kasenyi, bringing testing closer to the Ebola Treatment Unit and affected communities. What previously took approximately four to five days could now be completed in around six hours. That meant health teams could receive results on the same day and act more quickly on suspected cases.

Over the two-month period, 988 BVD samples were tested across the Aru and Kasenyi sites, with 101 confirmed positive. But the impact went beyond the number of tests performed. In Tchomia Health Zone, average daily testing increased from about 3.6 samples before the deployment to 14.9 afterwards—a more than four-fold increase. The mobile laboratories also

provided broader diagnostic support. Alongside BVD testing, teams were able to conduct fever-differential testing, biochemistry, haematology and rapid diagnostic tests. In Kasenyi, for example, malaria was detected in 30 of 62 samples tested for the major fever panel, including six cases where malaria and BVD were detected together. But moving a laboratory into an outbreak zone is about much more than putting equipment in a new location.

It is about people.

Laboratory professionals from the response team worked alongside their DRC counterparts, sharing skills and solving problems



together. Staff received practical mentorship in sample reception, safe specimen handling, molecular testing, data analysis, result interpretation, quality management, biosafety and biosecurity.

The aim was not to create a temporary solution that would disappear when the outbreak ended, but to leave behind stronger skills and greater local ownership.

The work also reached beyond the laboratory. Health facilities were engaged to strengthen early identification of suspected cases, safe sample collection and referral. In Tchomia, community engagement through faith-based platforms encouraged people to recognise symptoms, seek care early and report to the Ebola Treatment Unit for assessment and testing.

At Aru, the focus was equally important but different. Located along the DRC-Uganda border and serving highly mobile populations, the laboratory needed to be ready not only to test, but to operate safely and reliably during a high-pressure response.

Teams worked on laboratory organisation, biosafety and biosecurity, quality systems, documentation and safer workflows—while keeping testing going.

This experience offers a powerful reminder of what outbreak response really looks like. It is not one laboratory, one test or one team. It is a chain of people and systems working together—from the health worker who identifies a suspected case, to the person who collects the sample, the laboratory professional who processes

it, the surveillance team waiting for the result, and the clinicians and responders who decide what happens next. And behind that chain are partnerships that make rapid action possible.

For ASLM, supporting outbreak response is part of a wider commitment to ensuring that Africa has laboratories that are ready, connected and equipped with the people and systems needed to respond when it matters most.

The experience in DRC shows what can happen when the right expertise, partnerships and resources come together: the laboratory can move closer, results can come faster, local teams can grow stronger, and communities can be better served.

Implementing Decentralized Molecular Surveillance: Truenat Real-Time Micro-PCR Platform for Filovirus Outbreak Preparedness

Alaine Umubyeyi

[Molbio](#)



The 2026 Bundibugyo virus disease (BVD) outbreak in Central Africa [The Democratic Republic of the Congo (DRC), and Uganda] highlights critical gaps in diagnostic infrastructure, necessitating decentralized solutions to combat high fatality rates and rapid transmission in remote areas.

After emergency declarations by World Health Organization (WHO) and Africa Centres for Disease Control and Prevention (Africa CDC) in May 2026, confirmed cases in DRC increased rapidly and expanded into North Kivu and South Kivu Provinces.

Bundibugyo virus is part of a family of viruses that cause filovirus disease, which can cause high

mortality. Previous BVD outbreaks in Uganda and DRC reported case fatality rates of approximately 30% to 50%.

The current outbreak is occurring in remote and densely populated communities amid insecurity, humanitarian crisis, and high population and trade movement. These conditions increase the risk of disease spreading, and therefore call for intensified surveillance, timely information sharing, and coordinated cross-border preparedness. Timely isolation and case management depend on accurate molecular confirmation through nucleic acid amplification testing. Traditional workflows, however, require reliable power, cold-chain logistics, and



longer turnaround times, leading to delays in sample processing, case confirmation, isolation, contact tracing, and surveillance in remote or high-risk areas.

Health authorities in DRC, with WHO and partners, are scaling up public health measures, including laboratory surge capacity, to support rapid case identification, isolation, and care. Teams from the Institut National de Recherche Biomédicale (INRB), the national medical research laboratory for the Ministry of Health in DRC, are

deploying to Bunia and other locations to expand testing under a nationally led decentralization strategy, but options for decentralized testing remain limited.

Relevance of Truenat

Molbio's Truenat micro-PCR platform provides an alternative to traditional laboratory testing as a fully portable, battery-powered molecular laboratory. Nearly 1,200 Truenat platforms are already in use across 29 African countries, including 51 in DRC, primarily for infectious disease testing.

We have developed a real-time PCR test capable of detecting all major epidemic-causing filoviruses—Zaire ebolavirus, Sudan ebolavirus, Bundibugyo virus, Tai Forest, and Marburg virus—avoiding the dangerous diagnostic “blind spots” seen in older, strain-specific rapid kits. The test runs on the Truenat platform and delivers results in one hour.

Moving the diagnostic capabilities of a high-tier laboratory directly to rural and remote clinics cuts down sample transit times. This fast turnaround provides immediate, field-level confirmation of Bundibugyo, Zaire, or Marburg infections. Ultimately, this allows emergency medical teams to isolate patients sooner, protect communities, and stop transmission chains right where they start.

The test is currently being evaluated as part of a coordinated initiative to strengthen the diagnostic response to BVD.

Led by WHO, Africa CDC, CHAI, PATH and FIND with support from Unitaaid, the evaluations are being carried out in collaboration with Hôpitaux Universitaires de Genève (HUG), Switzerland, Charité – Universitätsmedizin Berlin, Germany, and Institut National de Recherche Biomedicale (INRB) in Kinshasa, DRC,

among others. They include both laboratory-based molecular assays to support confirmatory testing as well as diagnostics suitable for decentralized settings to enable faster, front-line decision making.

Evidence generated throughout this study may inform potential recommendations by national/regional public health authorities (e.g., Africa CDC) or support submissions for regulatory authorization (e.g., WHO-EUL).

As a point-of-care diagnostics company, we believe decentralized testing capacity is the bedrock of epidemic preparedness and response. With a sizable footprint of Truenat installations and ongoing evaluations of the Truenat Ebola/Marburg assay, we are committed to strengthening laboratory systems to meet the challenges of current and future filovirus outbreaks in African countries.



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The Certificate is Just the Beginning!

Joshua Mwangi
ASLM

There are moments in a career that stay with you—not because they were easy, but because you know what it took to get there. ASLM being recommended for ISO 9001:2015 certification is one of my proudest professional moments.

Our journey began in December 2024. At the time, ISO certification felt both exciting and daunting. We knew where we wanted to go but perhaps underestimated just how much the journey would ask of us. There were policies to rethink, processes to map, work tools to develop, risks to interrogate, records to organize, people to train and, most importantly, habits to change. There were long meetings, internal audits, corrective actions and moments when the finish line seemed further away than when we started. I certainly had many moments of doubt.

What kept me going was watching the determination of the team. Our Board gave us the mandate and backed that decision with sustained oversight and encouragement. At every major board meeting, our Board Chair would always make a point to inquire where we were in the certification process, and what support we needed. Our CEO never allowed ISO to become simply an operation or QMS project; he consistently reinforced that quality was an organizational priority, and that it was everyone's responsibility to participate fully. My colleagues on the Senior Management Team provided leadership within their functions, challenged the process and helped turn requirements on paper into how ASLM actually works.

Our HR department made sure that QMS was a standing and mandatory KPI for all staff. Our departmental heads and



process owners carried perhaps the hardest responsibility: taking policies and procedures and making them real in the everyday work of their teams, and ensuring that the QMS flame never burned out in the department.

And then there were our QMS Champions. They became the heartbeat of the journey—answering questions, following up actions, preparing teams, finding evidence and, occasionally, reminding all of us of commitments we might have overlooked! Their persistence made an enormous difference. Ultimately, however, certification belongs to every ASLM colleague.

A management system cannot be certified because a few people understand ISO. It works because people across an organization understand their role, follow agreed processes, keep the right records, identify when something has gone wrong and have the confidence to make it better. That collective effort culminated in our Stage 2 audit, with ASLM recommended for certification with only three minor nonconformities. I remember the sense of pride listening to the closing remarks—not simply because of the result, but because I

could see the journey behind it. Yet the certificate cannot become our destination. It is the beginning of our sustained journey of quality. Our collective responsibility becomes greater now. We pursued ISO because we want ASLM to be customer obsessed. We want to understand what our customers and stakeholders need before they have to ask. We want our products and services not merely to meet expectations, but to exceed them. We want to be responsive, reliable and proactive. And, importantly, we want evidence that we are getting better.

A year from now, our success should therefore not be measured by whether the ISO certificate is still hanging on the wall. It should be visible in shorter turnaround times, stronger processes, fewer recurring problems, better decisions, more satisfied customers and stakeholders, and teams that instinctively ask: "How can we do this better?"

I am immensely proud of what we have achieved together. But perhaps the most exciting part of this journey is that we are only getting started.

The Numbers Behind the Response

30,024 Ebola tests

11,250 Extraction Kits

250 People trained

Behind every confirmed Ebola case is a laboratory that had what it needed, when it needed it.

ASLM is supporting the Ebola outbreak response in the Democratic Republic of the Congo and Uganda with

US\$907,514

in laboratory commodities, equipment, workforce development and biosafety expertise.



In the DRC, we have delivered **30,024** test kits, **11,250** extraction kits, two PCR machines and two testing devices — with a further **4,320** test kits already dispatched. Cold-chain equipment, biosafety cabinets and specialist expertise are moving through procurement and deployment.

In Uganda, 205 laboratory and response personnel have completed training. Diagnostics alone don't stop an outbreak. Kits need machines. Machines need power, cold chain and biosafety. And all of it needs people trained to use it under pressure. That's the package we're building with national authorities and partners. Every test counts. Every trained professional strengthens the response. Every timely result can help save lives.

One Response. Many Partners.

US\$5.75

million in identified partner support is helping strengthen the Ebola response in the Democratic Republic of the Congo and Uganda.

Behind the response is a powerful network of partners supporting different pieces of the laboratory and preparedness efforts:

Government of Canada / Global Affairs Canada, through Africa CDC Project SIMBA

Supporting test and extraction kits, PCR devices and laboratory equipment, biosafety expertise, and training for laboratory staff in the DRC and Uganda.

HERA - PAMTA (Partnership to Accelerate Mpox Testing in Africa) Project

Supporting test and extraction kits and laboratory workforce training, with a focus on laboratory personnel in Greater Kampala.

Gates Foundation

Supporting laboratory mapping and a tiered, scalable outbreak response approach, including workforce capacity, diagnostic innovation, partner and country coordination, decentralized response systems, and securing supplies and deployment.

Through collaborative efforts, these investments are helping build more than an emergency response. They are strengthening the people, systems, equipment and partnerships needed to detect outbreaks early and respond faster.

Different partners. Different contributions. One shared goal: stronger laboratories and a better-prepared region.



Global Affairs
Canada



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the European Union



When the System Is Ready, Outbreaks Can Be Stopped

Nuru Ngailo & Nelly Rwenji

[ASLM](#)



Uganda declared Ebola-free. But behind that headline is a story about preparedness, laboratories and people ready to act.

On 28 July, Uganda officially declared the end of its 2026 Ebola outbreak after completing 42 days without a new confirmed case. The outbreak recorded 20 confirmed cases, with 18 people recovering and two deaths. Fifteen of the confirmed cases were imported from the Democratic Republic of the Congo, while five were linked to those imported cases.

The declaration was more than the end of an outbreak. It was a demonstration of what happens when a health system is prepared to move quickly.

From the moment Ebola was detected, Uganda's response

brought together surveillance, laboratory testing, contact tracing, infection prevention and control, clinical care, community engagement and cross-border coordination. More than 800 contacts were identified and monitored, while surveillance was strengthened across high-risk districts and points of entry. And at the heart of that response were laboratories.

A suspected case cannot be contained until it can be detected. A contact cannot be safely followed without knowing where the virus is. And an outbreak cannot be controlled without timely, reliable results. This is where investments in laboratory systems make a difference.

During the wider Ebola response in the DRC and Uganda, ASLM has supported national efforts

with US\$907,514 in laboratory commodities, equipment, workforce development and biosafety expertise. In the DRC, this includes 30,024 test kits, 11,250 extraction kits, two PCR machines and two testing devices, with another 4,320 test kits dispatched. In Uganda, 205 laboratory and response personnel have completed training. These numbers tell only part of the story.

Kits need machines. Machines need power and cold chain. Safe testing needs biosafety. And none of it works without skilled people who can deliver results when the pressure is highest.

Uganda's experience is a reminder that preparedness is not something we build when an outbreak arrives. It is built through years of investment in people, laboratories, surveillance systems, partnerships and trust. It is also a reminder that Ebola does not stop at borders—and neither should preparedness. WHO and Africa CDC have emphasized the importance of cross-border collaboration as the response continues in the DRC, where transmission remains a regional concern.

For ASLM, the lesson is clear: strong laboratory systems are not just about responding to today's outbreak. They are about making Africa better prepared for the next one.

Every test counts. Every trained professional strengthens the response. And every investment in preparedness gives communities a better chance of stopping the next outbreak before it spreads.



Join Us at ASLM2026 Conference in Cape Town, South Africa

Be part of ASLM2026, taking place 8 - 11 December 2026 in Cape Town, South Africa, bringing together laboratory medicine professionals, researchers, policymakers and partners from across Africa and beyond.

Connect, learn and share innovations shaping the future of diagnostics and laboratory systems, while advancing collaboration towards stronger health systems.

Learn more and register:

<https://aslm2026.org/registration/>

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