

GLOBAL HEALTH INITIATIVE

Daytime protection, worn by the people who **need it most.**

A research and partnership overview: closing the daylight gap in malaria prevention with Safe Band Pro, WearSpray's wearable repellent platform.

THE GAP

Bed nets protect at night. Millions are exposed in daylight.

Malaria prevention has spent two decades winning the night — insecticide-treated nets and indoor residual spraying have driven down nighttime transmission across sub-Saharan Africa. But the mosquitoes have adapted, and so has the risk. A growing share of transmission now happens outdoors, in daylight, while women are fetching water, children are walking to school, and field workers are out in the sun.

597K

Malaria deaths in 2023 (WHO); roughly 95% occur in sub-Saharan Africa, mostly children and pregnant women.

263M

Malaria cases recorded globally in 2023 — alongside a record 7.6M dengue cases the following year.

~30%

Of malaria transmission is now estimated to occur during daylight hours — outside the reach of nets and indoor spraying.

Species like *Anopheles arabiensis* and *Anopheles funestus* are shifting their biting behavior toward the day — and current tools were never built to follow them there.

OUR POSITION

This is not a replacement. It's the piece that's been missing.

Nothing about this initiative asks the world to slow down on what already works. Bed nets save lives. Indoor residual spraying saves lives. Every dollar and hour invested in those tools should keep going where it's going.

WHERE SAFE BAND PRO FITS

Safe Band Pro is designed to **fill the daytime gap** that nighttime interventions were never meant to cover. It's worn on the wrist, dispenses repellent on demand at the press of a button, and is refillable — built for the hours when people are outside, active, and unprotected.

We see this as **one more layer in a layered defense**: nets at night, indoor spraying at home, and now a wearable that goes wherever the person goes during the day. The goal isn't to compete with existing public health infrastructure — it's to complete it.

What continues, unchanged

- Insecticide-treated bed net distribution and use
- Indoor residual spraying programs
- Existing WHO and national vector-control strategy

What Safe Band Pro adds

- On-demand protection during outdoor daylight exposure
- A tool that travels with the person, not the household
- Data on real-world adherence via embedded RFID/NFC tracking



ON THE GROUND

A device is only protection if people actually wear it. That starts with trust, not technology.

THE SOLUTION

Safe Band Pro: repellent, ready the moment it matters.

A refillable wristband dispenser that puts sunscreen, mosquito repellent, or hand sanitizer directly on the wrist — one press, one application, no bottles to carry or forget. Patented and purpose-built for consistent, everyday use in the field.



Refilling the wristband reservoir; a community training session on press-apply-reapply; distribution to caregivers in the field.

- **Press.** A single press releases a metered dose of repellent onto the skin — no spray drift, no waste.
- **Apply.** Designed for children and adults alike, with training built into the community rollout.
- **Reapply.** Refill stations at schools and health posts keep the band effective through peak biting hours.
- **Track.** Embedded RFID/NFC technology quietly logs usage and refill frequency, turning everyday wear into adherence data.

BUILT TO REFILL, NOT DISCARD

No cartridges. No disposables. Nothing left behind.

Humanitarian distribution only works long-term if it doesn't create a new waste problem in the communities it's meant to help. Safe Band Pro is built around a single reusable reservoir, not single-use cartridges — the band stays on the wrist, and only the repellent is replenished.

WHY THE REFILLABLE MODEL MATTERS

The reservoir is manufactured from **recyclable LDPE plastic** and designed to be refilled from bulk supply at community refill stations — schools, health posts, and local distribution points — rather than replaced. There is no cartridge to import, ration, or throw away.

At scale, the manufacturing target is roughly **\$1 per band**, keeping the humanitarian unit economics viable for large-scale, grant-funded distribution without compromising the no-waste design.

What this replaces

- Single-use aerosol cans and disposable wipes
- Chemical-impregnated bracelets with no refill option
- Bottles too bulky to carry through a full day outdoors

What stays constant

- One durable band, refilled for the life of the program
- Bulk repellent supply, not individually packaged doses
- A formulation-agnostic design — the same hardware can carry repellent, sunscreen, or sanitizer

THE RESEARCH

Built to be proven, not just believed.

A community-based, cluster-randomized controlled trial will generate the evidence organizations like WHO and the Gates Foundation require before endorsing a new intervention — measuring incidence, adherence, and bite frequency, not just testimonials.

40

Clusters enrolled — 20 intervention, 20 control — for unbiased, cluster-randomized comparison.

~11,000

Participants across all clusters, ages 5 and up, sized to detect a real effect with statistical power.

\$3.2M

Total 18-month program budget — personnel, partnerships, logistics, and independent evaluation.

Primary targets

- 50% reduction in malaria incidence in the intervention arm, analyzed via mixed-effects Poisson regression
- Objective adherence data captured through embedded RFID monitoring, not self-report
- Independent, third-party evaluation of results before any efficacy claim is made public

How we get there

- 20 trained Community Health Workers leading distribution, education, and monthly follow-up
- 3 Senior Researchers and 4 Data Analysts overseeing design, monitoring, and statistical rigor
- Culturally appropriate, translated informed-consent processes with local health authorities

THE HONEST CASE

A wristband alone doesn't stop malaria. Proof and people do.

We are not asking anyone to take Safe Band Pro's effectiveness on faith. For an organization like WHO — or any funder weighing where to put limited malaria dollars — two things have to be true before this earns a place next to bed nets and indoor spraying.

1. Rigorous, independent evidence

- A properly powered cluster-randomized trial — not a pilot's worth of warm anecdotes
- Objective adherence data, not self-reported usage
- Results published and reviewed regardless of what they show

2. Sustained community education

- Local health workers who explain the device, not just distribute it
- Ongoing engagement — a device only protects if it's actually worn, refilled, and trusted
- Programs designed and led with the communities they serve, not delivered to them

This isn't a claim that the problem is already solved. It's an investment case for finding out — rigorously, in the communities it's meant to serve.



COMMUNITY FIRST

Every rollout begins the same way — in conversation, not in a shipment of boxes.

Trained community health workers lead every introduction: explaining the device, answering questions, and building the trust that turns a new object on the wrist into a daily habit.

PROGRAM BUDGET

\$3.2M, allocated across nine categories.

Every dollar is scoped to a specific function of the trial — from the field staff who build trust door to door, to the independent evaluators who check our own results.

Personnel Costs	\$1,200,000
Overhead & Contingencies	\$950,000
Partnerships & Collaborations	\$350,000
Logistics & Distribution	\$180,000
Monitoring & Evaluation	\$150,000
Training & Capacity Building	\$100,000
Community Engagement & Awareness	\$100,000
Production & Procurement	\$90,000
Data Collection & Analysis	\$80,000
Total Program Budget	\$3,200,000

Personnel includes 3 Senior Researchers, 4 Data Analysts, a Project Manager, 20 Community Health Workers, 2 Field Supervisors, and 2 Administrative Assistants. Overhead includes a built-in 20% contingency reserve to absorb currency, supply, and timeline risk over the 18-month program.

RESEARCH TIMELINE

From approvals to answers, in 18 months.

The trial is structured in four phases, each building the foundation for the one after it — approvals and funding, local capacity, deployment, and analysis.

MONTHS 1-3 Preparatory

Approvals, partnerships, staffing, procurement, and training-material development ahead of any deployment.

MONTHS 4-12 Implementation

Participant recruitment, baseline data, device distribution, and monthly follow-up across all 40 clusters.

MONTHS 13-15 Analysis

Data cleaning, statistical modeling, and independent third-party evaluation of the results.

MONTHS 16-18 Reporting

Stakeholder briefings, peer-reviewed publication, and community feedback sessions sharing results back.

Grounded in Good Clinical Practice

- Full informed consent, with parental/guardian consent and age-appropriate assent for minors
- Independent ethics committee review and approval before any study activity begins
- Standard Operating Procedures for recruitment, data collection, device distribution, and adverse event reporting
- Alignment with ICH E6(R2) guidance and the WHO Handbook for Good Clinical Research Practice

PARTNER WITH US

Help us close the daylight gap — without slowing down the fight already underway.

We're inviting global health organizations, research partners, and funders to join a trial designed to generate real evidence, not just a good story. The tools that already work should keep working. This is what we believe can work alongside them.

Partner on Global Health →

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