Living in the Lassa Belt: Biomedical Research, Extractive Exchange, and the Weight of Viral Atmospheres in Liberia

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Zusammenfassung auf Deutsch

Diese Dissertation untersucht, wie das Lassa-Fieber im liberianischen Bong County durch das Zusammenspiel von räumlicher Ausbreitung der Krankheit, biomedizinischer Forschung und alltäglicher Pflegearbeit zu einer gelebten Realität wird. Anstatt die Endemizität als stabilen ökologischen Hintergrund zu betrachten, wird sie als eine zusammengesetzte Realität betrachtet, die durch Kategorien, Infrastrukturen und wiederholte Begegnungen entsteht, die Dörfer, Krankenhäuser, Labore und transnationale Programme zu einer erkennbaren Risikolandschaft verbinden. Die Arbeit zeichnet einen konzeptionellen Bogen von regionalen Vorstellungen pathologischer Risiken in Westafrika über die lokalisierte Bezeichnung eines „Lassa-Gürtels“ bis hin zum Konzept der „viralen Atmosphären“ als Erfahrungs- und Beziehungsstruktur des Lebens mit wiederkehrender viraler Bedrohung. Sie argumentiert, dass räumliche Bezeichnungen wie „endemische Zonen“, „Hotspots“ und „Gürtel“ nicht nur beschreibend sind, sondern als Technologien der öffentlichen Gesundheit fungieren, die bestimmte Landschaften für globale Gesundheitsakteure verständlich und handlungsfähig machen, Finanzierungs- und Forschungsagenden lenken und Überwachung und Intervention normalisieren. Diese Bezeichnungen finden Eingang in die Praxis durch Formulare, Zugangskontrollen, Triage-Routinen, Überweisungsmuster und institutionelle Narrative, die beeinflussen, welche Arten von Beweisen erbracht werden können und welche Arten von Leben wiederholt zur Beobachtung zur Verfügung stehen. Die Dissertation führt den Begriff „virale Atmosphären“ ein, um die sich abzeichnenden Intensitäten zu beschreiben, durch die Ansteckung im Alltag wahrgenommen und bewältigt wird, wo Angst und Hoffnung, Misstrauen und

Verpflichtung zwischen Körpern, Objekten, Protokollen und Erinnerungen entstehen. Sie entwickelt auch „Gewicht“ als Analyseinstrument für die kumulativen Belastungen, die solche Atmosphären im Laufe der Zeit mit sich bringen, wenn sich virale Risiken in Reputationen, moralischen Hierarchien und routinemäßigen institutionellen Reibungen niederschlagen. Das Gewicht macht sich bemerkbar in wiederholten Forschungsbesuchen und wiederholten klinischen Pfaden, in der Hartnäckigkeit von Gerüchten und der Beständigkeit von Stigmatisierung sowie in den langen sozialen Nachwirkungen von Krankheit und Überleben, die über die klinische Episode hinausgehen. Indem sie diese Prozesse in den Vordergrund stellt, leistet die Dissertation einen Beitrag zur Wissenschaft, die die Neutralität der Kartierung von Krankheiten kritisiert und zeigt, wie räumliche Kategorien nicht nur Wissen organisieren, sondern auch Verantwortung, Verletzlichkeit und Erwartungen verteilen.

Empirisch stützt sich die Dissertation auf sieben Monate ethnografischer Feldforschung, die 2023 und 2024 im Phebe Hospital und in drei umliegenden Gemeinden durchgeführt wurde: Phebe Airstrip, Suakoko und Rubber Factory. Diese Orte waren gleichzeitig Schauplätze des Alltagslebens und Brennpunkte der aktuellen Lassa-Forschung, darunter das Enable-Programm der CEPI, das in Liberia durch eine mit einer amerikanischen Universität verbundene Einrichtung umgesetzt wurde und Phebe sowohl als Pflegeeinrichtung als auch als Ort der Wissensproduktion positionierte. Die Feldforschung kombinierte Krankenhausethnografie in mehreren Stationen mit kontinuierlicher Mitarbeit in der Lassa-Isolierstation, Gesprächen mit Überwachungsbeamten und Gesundheitspersonal des Landkreises, wiederholten Besuchen in Diagnoseräumen, in denen PCR-Tests durchgeführt wurden, und dem Eintauchen in das Dorfleben der drei Gemeinden. Dieser multisite-Ansatz folgte

Verbindungen, anstatt von einem einzigen begrenzten Feldstandort auszugehen, und verfolgte, wie Fälle, Proben, Gerüchte, Protokolle und Erwartungen sich über institutionelle und soziale Welten hinweg bewegen.

Kapitel 1 verortet die Lassa-Fieber-Forschung in der längeren Geschichte der medizinischen Geografie und der globalen Gesundheitspolitik und zeigt, wie die Einstufung Westafrikas als Raum des Risikos und der Verheißung wiederkehrende „Boom-and-Bust"-Zyklen biomedizinischer Investitionen ermöglicht hat. Es untersucht, wie räumliche Rahmenbedingungen – einst verbunden mit kolonialen und postkolonialen Regimen der medizinischen Wissensproduktion – weiterhin beeinflussen, welche Orte als Gefahrenorte und gleichzeitig als Orte wissenschaftlicher Möglichkeiten sichtbar werden. In dieser Darstellung ist Forschung nicht einfach eine Reaktion auf lokale Bedürfnisse im Bereich der öffentlichen Gesundheit, sondern auch eine Form der Wertschöpfung, in der sich Vulnerabilität und Potenzial gegenseitig bedingen. Phasen intensiver er Aufmerksamkeit, die oft durch Krisenmomente ausgelöst werden, ziehen Finanzmittel, Fachwissen und Infrastruktur in bestimmte Korridore und Institutionen, während dazwischenliegende Phasen der Vernachlässigung Lücken in nachhaltigen Gesundheitssystemen und ungleiche Vorteile für die betroffenen Gemeinschaften hinterlassen. Das Kapitel argumentiert, dass diese zyklische Sichtbarkeit sowohl die materielle Landschaft der Intervention als auch die Reputationslandschaft strukturiert, durch die Orte wie Bong County bekannt sind und regiert werden. Es zeigt, wie die Diskussion um „Hotspots" und die Logik der Risikovorhersage externe Prioritäten in lokale Institutionen lenken können, wodurch Einrichtungen wie Phebe zu wiederkehrenden Knotenpunkten von klinischer und wissenschaftlicher Bedeutung werden. Gleichzeitig wird betont, dass die Auswirkungen von Boom- und Bust-Zyklen

nicht nur institutioneller Natur sind, sondern auch die lokalen Erwartungen daran prägen, was Forschung und Versorgung leisten können und was es bedeutet, an einem Ort zu leben, der immer wieder Projekte anzieht. Indem es die zeitliche Politik der Aufmerksamkeit in den Vordergrund stellt, leistet das Kapitel einen Beitrag zur Debatte über die Krisenorientierung der globalen Gesundheit und zeigt, wie langfristige endemische Zustände oft durch kurzfristige Projektlogiken bewältigt werden. Damit stellt es die zentrale These der Dissertation auf, dass Endemizität durch wiederkehrende Infrastrukturen der Anerkennung – Finanzierung, Protokolle, Überwachungsroutinen und institutionelles Gedächtnis – konstruiert wird, die bestimmte Orte dauerhaft als risikobehaftet erscheinen lassen. Das Kapitel schließt mit der Darstellung des „Lassa-Gürtels“ nicht als einfache epidemiologische Region, sondern als historisch entstandenes räumliches Objekt, das in den folgenden Kapiteln als alltägliche Kategorie untersucht wird. Damit leitet es den Übergang der Dissertation von regionalen räumlichen Vorstellungswelten zu lokaler Platzgestaltung ein und bereitet den Boden für eine genauere Analyse, wie Forschung im Gürtel sozial anerkannt und moralisch umstritten wird.

Kapitel 2 untersucht, wie „Gürtelgespräche“ im Umfeld des Phebe-Krankenhauses und in den umliegenden Dörfern alltäglich werden und eine „endemische Ortsgestaltung“ hervorbringen, die wiederholte Probenahmen und Überwachungen legitimiert und gleichzeitig das Gefühl einer ständigen Überwachung durch die Gesundheits en verstärkt. Das Kapitel behandelt den „Gürtel“ als eine räumliche Kategorie der öffentlichen Gesundheit, die sowohl epidemiologisches Wissen organisiert als auch Aufmerksamkeit und Interventionen verteilt und ökologische Unsicherheit in eine allgemein akzeptierte Risikogeografie umwandelt. Durch ethnografische

Auseinandersetzung mit dem Dorfleben und Forschungsbegegnungen zeigt es, wie der Gürtel in die Alltagssprache und institutionelle Praxis übernommen wird und zu einer gemeinsamen Erklärung dafür wird, warum immer wieder Außenstehende kommen, warum wiederholt Blut abgenommen wird und warum von bestimmten Gemeinschaften erwartet wird, dass sie sich beteiligen. Das Kapitel konzeptualisiert biomedizinische Forschung als einen extraktiven Austausch und entwickelt die Analyse „Blut gegen Geld“, um zu beschreiben, wie die Entschädigung als eine Art Volksvertrag erlebt wird, der die Teilnahme stabilisiert. In Kontexten, in denen die routinemäßige Gesundheitsversorgung unzuverlässig ist, kann die Teilnahme an Forschungsprojekten als pragmatischer Weg zu Ressourcen dienen: Kleine Zahlungen, Gesundheitschecks und die Hoffnung auf Nachsorge werden zu unmittelbaren Gegenleistungen, die invasive Eingriffe verhandelbar machen. Das Kapitel zeigt jedoch, dass Austausch niemals sozial neutral ist, da Geld, das mit Blut verbunden ist, moralische Hierarchien neu formt und Praktiken des Stigma-Managements hervorbringt, darunter euphemistische Sprache, die die Seriosität schützt und Vorwürfen des „Verkaufs“ des Körpers entgegenwirkt. Gerüchte über den Kreislauf von Blut – seine „dunklen Bestimmungsorte“, seine Umwandlung in Profit, sein Verschwinden ohne Wiederkehr – werden als volkstümliche Kritik an Undurchsichtigkeit und ungleicher Verteilung von Nutzen analysiert und nicht als irrationale Hindernisse für die Wissenschaft. Das Kapitel verfolgt auch die Erwartungen an Impfstoffe als einen vielversprechenden Horizont, der über die unmittelbare Entschädigung hinausgeht und die Teilnahme mit einer imaginären Zukunft des Schutzes und der Gegenseitigkeit verbindet, während es gleichzeitig die Fragilität solcher Versprechen unter projektbasierten Forschungsregimen hervorhebt. Ablehnungen und Zögern werden nicht als bloße Nichtbefolgung behandelt, sondern als ethische und

politische Positionen innerhalb einer ungleichen Infrastruktur von Optionen, die zeigen, wie Zustimmung formal freiwillig, praktisch jedoch eingeschränkt sein kann. Der zentrale Beitrag des Kapitels besteht darin, zu zeigen, wie der Gürtel Berechtigung erzeugt, Berechtigung Zugang erzeugt, Zugang Proben erzeugt und Proben zukunftsorientierten Wert generieren – während Gemeinschaften diese Kette durch Verträge, Gerüchte, Verlegenheit, Hoffnung und Forderungen nach Erklärungen verhandeln. Auf diese Weise wird die Teilnahme als situative Navigation innerhalb von Knappheit und ungleicher Zirkulation neu definiert und es wird gezeigt, wie Forschung durch moralische Ökonomien, die sowohl die Gewinnung ermöglichen als auch in Frage stellen, lokal umsetzbar wird.

Kapitel 3 wendet sich von den Forschungsergebnissen ab und widmet sich den gelebten Erfahrungen mit der Lassa-Fieber-Epidemie, indem es nachzeichnet, wie Überlebende und ihre Angehörigen Krankheit, Überleben und Wiedereingliederung in den emotional aufgeladenen Räumen der Isolierstation und den umliegenden Gemeinden erleben. Das Kapitel entwickelt den Begriff der „viralen Atmosphäre“ als analytisches Konzept für Epidemien als emotionale und räumliche Formationen und argumentiert, dass das Virus nicht nur durch Pathologie erlebt wird, sondern auch durch relationale Intensitäten, die durch Angst, Hoffnung, Erinnerung und soziale Beurteilung hervorgerufen werden. Es zeigt, wie die Isolierstation einen ambivalenten Status erhält: ein Ort, der aufgrund realer Verlusterfahrungen als „Todesfalle“ gefürchtet wird, aber auch ein Ort, an dem das Überleben als Wiedergeburt erlebt werden kann und an dem das klinische Leben unter großer Unsicherheit stattfindet. Das Überleben beendet die Geschichte nicht, sondern leitet eine zweite Phase atmosphärischer Verhandlungen ein, in der Stigmatisierung, Misstrauen und körperliche Nachwirkungen die

Wiedereingliederung erschweren. In Gemeinschaften, in denen die verbleibende Ansteckungsgefahr sozial vorstellbar bleibt, können Überlebende als anhaltendes Risiko behandelt werden, und ihre körperlichen Folgeerscheinungen werden zu Zeichen, die das Virus auch nach der Entlassung präsent halten. Das Kapitel argumentiert, dass die Isolierstation und die Gemeinschaft in einer Rückkopplungsschleife verstrickt sind: In den Dörfern kursierende Ängste sättigen die Isolierstation mit Furcht, während Erfahrungen mit Tod und Trennung in der Isolierstation Gerüchte verstärken und die Ängste der Gemeinschaft intensivieren. Entgegen den bekannten Narrativen über Ausbrüche, die eine plötzliche Krise betonen, hebt das Kapitel die endemische Dauer hervor und zeigt, wie Angst zu einem dauerhaften sozialen Zustand wird, der durch wiederholte Fälle von Lassa-Fieber und durch institutionelle Undurchsichtigkeit geprägt ist. Hier wird das „Gewicht“ als Anhäufung am deutlichsten sichtbar, da virale Atmosphären durch Geschichten, Reputationen und alltägliche Vermeidung oder verzögerte Inanspruchnahme von Pflege über die Zeit hinweg weitergetragen werden. Das Kapitel beleuchtet auch Gegenbewegungen innerhalb dieser Atmosphäre: Mitgefühl, Solidarität und die interpretative Arbeit, die Überlebende leisten, um zu verstehen, was ihnen widerfahren ist und was es bedeutet, weiterzuleben. Durch die Fokussierung auf das Überleben erweitert das Kapitel Debatten, die Ebola oft als paradigmatischen Ort der Folgen einer Epidemie in den Mittelpunkt gestellt haben, und zeigt, wie eine weltweit weniger spektakuläre, aber anhaltend folgenschwere Krankheit ihr eigenes langes soziales Nachleben erzeugt. Es wird argumentiert, dass die Veränderung der Atmosphäre mehr als nur klinisches Fachwissen erfordert; sie erfordert Transparenz, vertrauensvolle Beziehungen und überlebenssensible Wege, die sowohl die biomedizinische als auch die soziale Genesung berücksichtigen. Damit leistet das

Kapitel einen Beitrag zur Wissenschaft, die Epidemien ebenso als soziale wie als biologische Phänomene behandelt, und positioniert virale Atmosphären als entscheidende Linse für das Verständnis des endemischen Lebens.

Kapitel 4 kehrt zur Isolierstation des Phebe-Krankenhauses zurück, um zu analysieren, wie Protokolle und Eindämmungsmaßnahmen aufgrund von Ressourcenknappheit und elterlichen Verpflichtungen kontinuierlich überarbeitet werden. Mit Schwerpunkt auf der Aufnahme von Kindern und Jugendlichen untersucht das Kapitel die „innovative, aber unorthodoxe“ Praxis, Müttern als Betreuerinnen den Zugang zur Isolierstation zu gewähren, wo sie neben den biomedizinischen Aufgaben der Krankenschwestern auch für die Ernährung, Hygiene und emotionale Unterstützung zuständig sind. Es wird argumentiert, dass diese Regelung nicht einfach einen Verstoß gegen die Grundsätze der Infektionsprävention darstellt, sondern eine situative Reaktion auf die moralischen und praktischen Anforderungen der Pflege in einem Umfeld, in dem Personalmangel, emotionale Bedürfnisse und der Ruf der Einrichtung aufeinander treffen. Die Anwesenheit der Mütter erhält den Betrieb der Station aufrecht und wirkt Gerüchten entgegen, indem sie Zeugnis ablegt, den Familien Beweise dafür liefert, was „innerhalb“ eines gefürchteten Raums geschieht, und die Angst vor Verlassenwerden mindert, die sonst zu Ablehnung und Verzögerungen führen kann. Gleichzeitig zeigt das Kapitel, dass diese Regelung Schwachstellen mit sich bringt: ungleicher Zugang zu Schutzausrüstung, uneinheitliche Einweisung und Schulung sowie unklare Verantwortlichkeiten, wenn „informelle“ Pflege strukturell notwendig wird. Das Kapitel untersucht die Praktiken im Umgang mit persönlicher Schutzausrüstung (PSA) und Schwellenroutinen als Formen situativer Risikobewertung, bei denen das Personal den Schutz anhand von Erfahrung, Arbeitsbelastung und Ressourcenlogik kalibriert, und

zeigt, wie es im endemischen Klinikalltag zu Abweichungen vom Protokoll kommt. Anstatt die Eindämmung als stabile Kontrollarchitektur zu behandeln, zeigt das Kapitel, dass es sich um eine fortlaufende Leistung handelt, die Pflege und Verhandlungen erfordert, und plädiert für kontextsensitive Standardarbeitsanweisungen, die die Rollen der Pflegekräfte formalisieren und die Arbeit der Familienangehörigen schützen. Es unterstreicht auch, wie die Platzierung und die Barrieren der Isolierstation ein „Außen im Inneren“ schaffen, das die soziale Bedeutung der Isolation prägt und zu den allgemeinen atmosphärischen Bedingungen beiträgt, die die Suche nach Pflege strukturieren. Indem es die Pflege durch Verwandte in einen Kontext mit hochgradig folgenschweren Infektionskrankheiten einbringt, erweitert das Kapitel die ethnografischen Debatten über die familiäre Pflege in afrikanischen Krankenhäusern und zeigt, wie moralische Verpflichtungen Containment-Regime auf eine Weise neu gestalten können, die gleichzeitig nachhaltig und riskant ist. Das Kapitel kommt zu dem Schluss, dass die Verbesserung der Sicherheit und Legitimität erfordert, Pflegekräfte als integralen Bestandteil der Pflegeinfrastruktur anzuerkennen, anstatt sie als Ausnahmen zu behandeln, die ad hoc verwaltet werden. Auf diese Weise verbindet es die Themen der Dissertation – räumliches Risiko, Atmosphäre und Gewicht – mit der praktischen Ethik des Stationslebens und zeigt, wie endemische Governance durch alltägliche Arbeit am Rande der Ansteckung umgesetzt wird.

In diesen Kapiteln entwickelt die Dissertation eine kritische Anthropologie der endemischen Governance, die räumliche Klassifizierung mit moralischer Ökonomie und klinischer Praxis verknüpft. Sie zeigt, dass Forschung, Überleben und Pflege keine voneinander trennbaren Bereiche sind, sondern miteinander verflochtene Praktiken, durch die der Lassa-Gürtel institutionelle, soziale und e affektive Dichte erlangt. Indem

sie nachzeichnet, wie der „Gürtel“ zu einer gewöhnlichen Kategorie wird, die Erwartungen organisiert und wiederholte Interventionen legitimiert, leistet die Dissertation einen Beitrag zu Debatten darüber, wie Krankheitsgeografien entstehen und wie sie die Verteilung von Lasten und Nutzen prägen. Indem sie „Blut gegen Bargeld“ als einen volkstümlichen Vertrag und Gerüchte als Kritik theoretisiert, leistet sie einen Beitrag zur Forschung über globale Gesundheitsethik und -ausbeutung und betont, dass Gegenseitigkeit im Laufe der Zeit bewertet werden muss und nicht allein durch formelle Zustimmung angenommen werden kann. Durch die Entwicklung einer viralen Atmosphäre und Gewichtung leistet sie einen Beitrag zu Debatten über Affekte und epidemisches Leben und verlagert die Aufmerksamkeit von außergewöhnlichen Ausbruchsmomenten auf die Dauerhaftigkeit endemischer Zustände und die Anhäufung sozialer Nachwirkungen. Durch die Analyse der mütterlichen Pflege in der Isolierstation leistet sie einen Beitrag zur Krankenhausethnographie und zu kritischen Diskussionen über Protokolle und zeigt, wie Eindämmung durch Verwandtschaftspflichten und Knappheit kontinuierlich neu konfiguriert wird. Die Dissertation fordert daher einen Wandel von krisengetriebener Ausbeutung hin zu dauerhafter Gegenseitigkeit: transparente Ergebnisrückflüsse und Erklärungen, die an die Gemeinden zurückfließen, lokal rechenschaftspflichtige Partnerschaften, gestärkte Pflegeinfrastrukturen, die die Behandlung vertrauenswürdig machen, und Schutzmaßnahmen, die pflegende Angehörige als integralen Bestandteil und nicht als Ausnahmefall anerkennen. Letztendlich argumentiert sie, dass die Entlastung der viralen Atmosphäre erfordert, Orte wie Bong County nicht als permanente Laboratorien der Verletzlichkeit zu betrachten, sondern als Orte der Handlungsfähigkeit, die Anspruch auf nachhaltige Investitionen, ethische Erklärungen und eine Zukunft haben, die über Forschungsprojekte hinausgeht.

Abstract

This dissertation examines how Lassa fever in Bong County, Liberia, is made into a lived condition through the interplay of disease spatialization, biomedical research, and the everyday labor of care. Moving from regional imaginaries of pathological risk to the localized designation of a "Lassa belt," and then to the concept of "viral atmospheres," this thesis argues that endemicity is not simply an ecological fact but an assembled reality produced through categories, infrastructures, and repeated encounters. Spatial labels such as "endemic zones," "hotspots," and "belts" operate as public health technologies of place: they render certain landscapes intelligible and actionable to global health actors, guide funding and research agendas, and normalize surveillance and intervention in ways that distribute burdens unevenly. The dissertation conceptualizes viral atmospheres as the emergent, affective qualities of these assemblages—charged environments where contagion is sensed and managed through gates, triage routines, forms, rumors, and kinship obligations. It further develops "weight" as an analytic for the cumulative burdens that such atmospheres impose over time, shaping how research becomes plausible, how care is sought or avoided, and how survival is socially negotiated.

Empirically, the dissertation draws on seven months of ethnographic fieldwork (2023–2024) at Phebe Hospital—Liberia's key site for Lassa case management and an important node in contemporary Lassa research—and in three surrounding communities (Phebe Airstrip, Suakoko, and Rubber Factory) that were also research sites for the Coalition for Epidemic Preparedness Innovations' Enable program, implemented in Liberia by an American university. Chapter 1 situates Lassa fever research within longer

histories of medical geography and global health political economy, showing how West Africa's designation as a space of risk and promise has enabled recurring "boom-and-bust" cycles of biomedical investment. These cycles amplify scientific visibility during moments of crisis while leaving enduring gaps in sustained health infrastructure. Chapter 2 examines how "belt talk" becomes ordinary around Phebe, producing "endemic place-making" that legitimizes repeated sampling and surveillance while simultaneously intensifying feelings of perpetual scrutiny. Through the analytic of "blood for cash," the chapter theorizes compensation as a vernacular contract that stabilizes research participation under conditions of constrained choice, while also generating stigma management, rumors about blood's circulation, expectations of future vaccines, and refusals that function as vernacular critiques of opacity and unequal benefit. Chapter 3 traces survivorship across affectively saturated spaces—the isolation unit and the community—showing how fear, hope, memory, and stigma coproduce a contagious realm that shapes illness experience, reintegration, and the social afterlives of viral infection in an endemic zone. Chapter 4 returns to the isolation unit to analyze how protocols and containment measures are continuously reworked through resource scarcity and parental obligation, particularly the admission of mothers as caretakers for pediatric patients. It argues that kinship care sustains ward functioning and counters rumors through witnessing, while also producing new vulnerabilities and blurred accountability that demand context-sensitive standards operating procedures and caregiver protection.

Across these chapters, the dissertation advances a critical anthropology of endemic governance. It demonstrates that research, survival, and care are not separable domains but interlocking practices through which the Lassa belt acquires institutional

and affective density. By linking classificatory spatial forms to the moral economies of participation and the negotiated realities of high-risk clinical care, the thesis calls for a shift from crisis-driven extraction toward durable reciprocity: transparent result-return, locally accountable partnerships, strengthened care infrastructures, and protections that recognize family caregivers as integral rather than exceptional. Ultimately, it argues that alleviating the weight of viral atmospheres requires reimagining places like Bong County not as permanent laboratories of vulnerability, but as sites of agency entitled to sustained investment, ethical explanation, and futures that outlast research projects.

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Dedication

I dedicate this work to all the people who have suffered from Lassa fever, and continue to suffer from it across viral atmospheres, particularly survivors who still live with sequelae, be it physical or emotional.

Introduction

A long rope attached to both sides of an open, iron-fenced gate was used as a barrier to control access to the hospital compound. Security guards managed the rope from their guard post, directing movement and lowering the barrier as necessary to allow vehicles to enter and exit. Arrival at Phebe Hospital becomes a small choreography of stopping, waiting, and receiving authorization to pass. Clearly written on the guardhouse was the message: “STOP: PHEBE SECURITY CHECKPOINT.” In front of the guardhouse stood a large handwashing device: a black plastic tank mounted on a metal stand with a tap on its lower edge and a plastic container underneath to receive handwashing water. This device was clearly a residue from a time when hygiene was made public and visible—an infrastructural reminder of the expectation that cleanliness could be staged as a collective discipline during the COVID-19 pandemic and Ebola outbreak. Yet, it no longer functioned as designed. The container meant to receive used water had been repurposed as a trash bin, quietly announcing how epidemic artifacts survive by being absorbed into everyday economies of use, disposal, and improvisation. The tank remained in place as a kind of memorial technology, present and legible but partially emptied of its intended function that still carried the atmosphere of a time when viral danger was assumed to be everywhere. This small transformation—from a hygiene apparatus to a waste receptacle—shows how the afterlives of outbreak measures linger, not necessarily as effective protection, but as material reminders that structure perception and signal vigilance, even in the absence of a declared crisis. Together, the rope, the sign, and the idle handwashing station made the entrance feel less like a neutral

passage and more like a managed border—an entryway into a space where the possibility of infection is taken seriously enough to be addressed at the outset (Fig. 1.A).

To the right of the guardhouse stood another building that housed the triage unit (Fig. 1.B). Positioned as the hospital's second threshold, it served as its most explicit diagnostic filter. There, a team of nurse aides performed a role that was both mundane and significant: to quickly and accurately detect which bodies might pose a risk to others. Between the aides and the incoming patients was a transparent screen bearing a blunt instruction: "SCREENING WINDOW: NO MASK, NO SERVICE" (Fig. 1.C). When I inquired about the policy, the nurse aides explained that the notice was a remnant from the height of the COVID-19 pandemic, and it had remained even as enforcement gradually waned. The sign's persistence mattered. It demonstrated that epidemic infrastructures do not simply disappear when the crisis subsides. Rather, they linger as material memories that continue to shape how institutions present themselves and how patients are received. From behind the screening window, the nurse aides took temperatures, asked a short set of questions, and filled out a triage form listing symptoms associated with diseases under surveillance, including Lassa fever and Ebola. The form compressed different viral threats—with different histories, routes of transmission, and social resonances—into a single procedural present. Depending on the information on the form, patients were either directed to the emergency room (ER) if a fever was detected or routed to other hospital wards if not. In other words, the triage process transformed the initial encounter into a classification exercise, rapidly converting narrative and bodily sensations into categories and routes. The screening window not only separated nurse aides from patients but also rendered that separation visible, making the institution's cautious stance part of the architecture of first contact.

Figure 1: *Phebe Hospital's Gate Entrance: A) Guardhouse (Photo by Catherine Nimely). B) Triage Unit. C) Screening Window in the Triage Unit.*

At first glance, the entrance layout of Phebe Hospital—the rope barrier, the checkpoint sign, the inert handwashing device, the screening window, the symptom checklist—made it clear that I had arrived in what I came to think of as a "viral atmosphere": a charged environment in which contagion is not merely a biomedical fact, but also a spatial and social condition that presses on everyday interactions. I borrow the term from the Medical Anthropology Research Group at the Bernhard Nocht Institute for Tropical Medicine, which proposes "viral atmospheres" as a way of grasping how epidemics come to be felt and lived (BNITM 2022). According to theorists of atmosphere and affect, an atmosphere cannot be reduced to individual emotion. Rather, it is an emergent quality of a situation that arises between bodies, objects, architectures, and histories (Böhme 1993; B. Anderson 2009). The main entrance to Phebe Hospital was saturated with such situational cues. The checkpoint demanded a pause and permission; the screening window managed proximity; the triage form standardized suspicion; and the handwashing station, even though inert, acted as an infrastructural memory of a moment when the nation's public spaces were reorganized around an imperative of visible hygiene. Viral atmospheres are shaped as much by these material residues as by active outbreaks, because residues teach people how to anticipate risk and how institutions perform vigilance. In that sense, the atmosphere at the gate was not simply about fear; it was about the normalization of caution as a practical orientation. Even when nobody insisted on masks anymore, the sign continued to make breath and contact intelligible as administrative problems. Even when the handwashing device no longer dispensed water, it continued to signal that this was a place where viral threat had once been rendered governable through ritualized cleanliness—and could be again. What the visitor encountered first was not the virus itself, but a world arranged around

the possibility of the virus: a world where movement and touch are mediated by barriers, where symptoms are routed through categories, and where the infrastructures of past epidemics remain visible as quiet instructions.

The notion of weight becomes analytically useful here, not as a rhetorical flourish, but as a way of describing how viral atmospheres accumulate and endure. The weight of a viral atmosphere is not only located in epidemiological numbers or official descriptions marking Bong County as a place of heightened risk. It is also felt in the mundane burdens that take shape in routine. Weight is sensed in the stop at the checkpoint and the slight delay that makes arrival feel conditional. It is sensed in the irritation of repeated questions, the mild indignity of being screened behind a barrier, and the quiet recalibration of one's body to render it legible to institutional categories. Weight is also temporal; it accumulates through repetition, through repeatedly encountering the same devices and warnings over months and years, and through the persistence of signs whose original urgency has faded, yet whose message remains visible. In this sense, weight resembles the "stickiness" of affect that Sara Ahmed (2013) describes, the way emotions adhere to objects and circulate through repeated association. The mask notice, the triage form, and the checkpoint each become sticky with the histories that made them necessary and the uncertainties that keep them in place. Furthermore, weight is unevenly distributed. Some bodies move quickly through the gate, recognized and waved on, while others must explain themselves, linger longer, and carry a greater burden of suspicion. Therefore, the weight of viral atmospheres includes the social differentiation produced by infrastructures that are ostensibly neutral yet uneven in practice. Speaking of weight means attending to the cumulative heaviness of living in a place where contagion is

always a plausible explanation for fever, and where this plausibility shapes how institutions and communities meet.

The surrounding villages of Phebe Hospital, including Phebe Airstrip, Rubber Factory, and Suakoko—locally referred to as the "Lassa belt" of Bong County, and sites of an ongoing Lassa research study—are not merely locations on a map. They are part of a local geography of attribution where illness, rumors, and biomedical attention repeatedly converge. People do not live inside epidemiological tables, but they do live inside reputations, and reputations can become heavy. Here, the "Lassa belt" label is more than a mere description; it can become a social environment that shapes outsiders' expectations, institutions' priorities, and residents' self-perception. Classification scholars have long noted that categories are powerful because they manifest in forms, routines, and infrastructures, producing real consequences (Pels 2022; Bowker and Star 1999). At Phebe Hospital's gate, classification was visible in motion: symptoms became ticks, ticks became routes, and routes determined who could go where, how long they had to wait, and the order in which they would be treated. The atmosphere was not only confined to the clinical space. It extended beyond the hospital compound into the rhythms of surrounding communities, where Lassa fever is not an abstract scenario, but rather a recognized threat that can alter social relations, from the meaning of seeking care to interpreting bodily signs. And here is precisely where the ethnographic problem begins: the same sorting devices that aim to protect can also intensify the sense that the hospital is a place where one might be separated, delayed, or redefined. The checkpoint and the triage unit are meant to ensure care, but they can also feel like an indication that care is contingent upon passing through suspicion. Viral atmospheres are not only the

consequence of viruses; they are also produced by the infrastructures built around them and the histories that make those infrastructures credible.

In Liberia, one such history that made Phebe Hospital credible dates back to 1972 when Esther Bacon, an American missionary nurse and midwife, contracted the Lassa virus while treating patients at Zorzor Hospital in Lofa County. Due to a lack of clinical improvement and the deterioration of her condition, Mrs. Bacon was medevacked to Phebe Hospital for better care. Despite Phebe Hospital being better equipped at the time, she succumbed to Lassa fever (Frame 1992c). Since then, Phebe Hospital has gained extensive experience in managing and researching Lassa fever. In fact, it is still the only hospital in the country with a dedicated treatment center for the disease, known as the isolation unit (IU). At the height of the devastating 2013-16 Ebola epidemic, which killed more than eleven thousand people, predominantly in Guinea, Liberia, and Sierra Leone (Ohimain and Silas-Olu 2021), the same IU was temporarily converted into an Ebola treatment center in Bong County, before a more suitable center was subsequently built outside the village of SKT, about ten minutes' drive from Phebe Hospital. This brief history—Esther Bacon's death at the hospital, the hospital's long engagement with viral hemorrhagic fevers, and the repurposing of the isolation unit during the early Ebola period—should not be seen as a complete history, but as a way of showing how institutions carry earlier crisis moments into the present. My point here is not to catalog events, but to underscore how certain deaths and interventions become anchors for institutional identity.

In many global health accounts, attention intensifies when risk touches particular bodies and travels through transnational networks, making some events more visible

than others. Paul Farmer's (2001) critique of how structural inequality shapes disease visibility helps contextualize this pattern without reducing it to moral outrage. At Phebe Hospital, the resonance of missionary medicine, evacuation, and the hospital's role in successive viral episodes contribute to a local sense that lethal pathogens are not only imaginable, but also historically confirmed. This confirmation does not produce a single response, but rather an ambivalent atmosphere in which caution and necessity coexist. People come to the hospital because they need treatment, but they also come, knowing that the hospital can become a place of separation and fear. The repurposed isolation unit exemplifies how medical spaces gather multiple temporalities. They are built for one disease, used for another, and remembered through both. These spaces are infrastructural archives, repositories where past emergencies leave material traces that shape present expectations. The rope barrier and the screening sign belong to this archive. Though small and replaceable, they hold the sediment of earlier urgency and continue to inform the moral and sensory texture of arrival.

From this opening scene, the analytical framework of this dissertation is not just about why Lassa fever persists in certain places, how hospitals manage dangerous infections, or how research operates in contexts of scarcity. Rather, it is how a place becomes lived as a "belt"—a spatial designation that gathers biomedical attention—and how that designation becomes heavy through the atmospheres it generates. What does it mean to inhabit a landscape where fever is repeatedly routed through suspicion of a viral threat, even as fever is also a common feature of everyday illness? How do institutional devices—ropes, signs, screening windows, handwashing stations, triage forms, and the IU—mediate the boundary between care and control, between welcome and screening, and between ordinary treatment and exceptional vigilance? How does

“the Lassa belt” move from an epidemiological shorthand into the practical and affective life of communities, shaping what is expected of them, what is asked of them, and what claims they can make in return?

By foregrounding weight, this dissertation keeps in view the distribution of burdens across roles and spaces: the burden of being repeatedly classified, the burden of being repeatedly approached as a risky place, the burden of carrying obligations of care in environments where proximity can be reframed as danger. The IU is where this transformation becomes visible: where designation becomes practice, where history becomes infrastructure, and where viral risk first presses on the body as a lived condition. This dissertation follows that pressure as it moves outward into villages and inward into hospital spaces, tracking how biomedical research and clinical care coproduce the social worlds through which Lassa fever becomes not only an infection but an environment—an atmosphere with weight. It thus follows these social worlds, moving from broader disease spatialities to the local formation of the Lassa belt and the biomedical attention it generates, from belt-making to viral atmospheres, and from atmospheres to the practical labor through which care and containment are made possible in everyday institutional life.

A). A Historiography of Lassa Fever

Lassa fever is an acute viral hemorrhagic illness caused by the Lassa virus (LASV), which belongs to the Arenaviridae family (WHO 2024). The disease poses a significant public health challenge in parts of West Africa, where it is endemic in Benin, Ghana, Guinea, Liberia, Mali, Nigeria, and Sierra Leone (WHO 2024). Nigeria experiences the largest number of reported cases annually. The multimammate rat (*Mastomys*

natalensis) is the primary reservoir host of LASV and sheds the virus in its urine and feces (J.B. McCormick et al. 1987). Humans typically become infected through direct or indirect contact with these excreta, often via contaminated household surfaces or food. Secondary human-to-human transmission can occur through direct contact with the blood, secretions, organs, or other bodily fluids of infected individuals, particularly in healthcare settings lacking adequate infection prevention and control measures (Bausch et al. 2001). The geographic range of the *Mastomys* reservoir and the virus may be wider than currently recognized. Serological evidence suggests that the virus has spread to Ivory Coast, Togo, and Burkina Faso (Sogoba, Feldmann, and Safronetz 2012). Climate change, urbanization, and increased population mobility contribute to concerns about potential geographic expansion, classifying Lassa fever as a pathogen of epidemic potential and a priority for the World Health Organization (WHO) R&D Blueprint (WHO 2016a).

The clinical presentation of Lassa fever is highly variable, making diagnosis challenging. An estimated 80 percent of infections are mild or asymptomatic, while 20 percent progress to severe disease. After an incubation period of six to twenty-one days, symptomatic cases often begin insidiously with nonspecific flu-like symptoms, such as fever, general weakness, malaise, and headache. These symptoms may be followed by a sore throat, nausea, vomiting, diarrhea, and chest or abdominal pain. In severe cases, manifestations can include facial swelling, fluid in the lung cavity, and bleeding from the mouth, nose, vagina, or gastrointestinal tract. Other severe manifestations include hypotension and shock (Yun and Walker 2012; WHO 2024). Neurological complications, such as permanent hearing loss, occur in one-third of cases, irrespective of disease severity (Mateer et al. 2018). The overall case fatality rate is estimated at 1 percent, but

the observed case fatality rate among hospitalized patients with severe complications can exceed 15 percent (WHO 2024). Treatment relies on early supportive care and the antiviral drug ribavirin, which is most effective when administered intravenously at the beginning of the illness (WHO 2024). Currently, there is no licensed vaccine for Lassa fever, though several candidates are in development. Thus, prevention centers on community hygiene and infection control. Key strategies include storing food in rodent-proof containers, disposing of garbage away from homes, and keeping homes clean to prevent rodent infestation. In healthcare settings, strict barrier nursing, isolation of suspected patients, proper use of personal protective equipment (PPE), and safe burial practices are critical to preventing nosocomial outbreaks (Bausch et al. 2001).

Lassa fever entered the global scientific archive through a mission-hospital tragedy that transformed a local febrile illness into an international threat. In 1969, cases clustered around the town of Lassa in what is now northeastern Nigeria, and the deaths and near-deaths of missionary nurses catalyzed the rapid identification of the virus and transnational concern (Lo Iacono et al. 2015; Monath 2019). What followed was not a smooth accumulation of knowledge but a historically uneven process in which outbreaks, laboratory capacities, and geopolitical attention repeatedly redefined what Lassa is: a clinical syndrome, a zoonosis, a nosocomial hazard, a diagnostic challenge, and a research object. This literature demonstrates that Lassa has long been influenced by a unique infrastructure of detection—mission hospitals, rural referral facilities, and, more recently, enhanced diagnostic infrastructures and specialized treatment wards—whose practical limitations compelled clinicians to work with incomplete evidence and probabilistic suspicion (Dahmane et al. 2014; NPHIL 2017). In other words, Lassa's history is also a history of where, and under what institutional conditions, fever becomes

recognizable as something other than malaria, typhoid, or ordinary sickness. Contemporary systematizations still highlight this diagnostic ambiguity as the majority of infections are mild or nonspecific, and severe disease resembles many other acute syndromes until hemorrhage, edema, or shock emerges, often late in the disease process. This epidemiological indeterminacy is precisely why particular hospitals, recurrently positioned as sites of triage, isolation, and sample collection, become epistemic anchors in the region's Lassa story (Merson et al. 2021).

Another foundational axis in the literature is the early recognition that Lassa fever was not just a "village disease" but a "hospital disease"—an infection whose clinical presentation and scientific visibility often depended on institutional corridors, wards, and caregiving practices. This recognition is most evident in Liberia's 1972 hospital epidemic in Zorzor, which was reported in detail by Mertens (1973) and colleagues. It was a cluster among patients and staff at an American missionary hospital in northern Liberia between March and April 1972, whose transmission and clinical presentation were carefully reconstructed (see also Monath 1973). A parallel report in the WHO's (1972) *Weekly Epidemiological Record* also documented the outbreak, highlighting how quickly such events were incorporated into international alert circuits. Importantly, the outbreak report hinted at a longer local history: sporadic compatible cases had been noticed for years in the district, suggesting that "emergence" was partly a matter of recognition rather than novelty (Mertens et al. 1973). This early Liberian cluster is important not only because it fully explains the dynamics of the disease, but because it establishes a lasting template: Lassa becomes most "real" when it reorganizes hospital life—staff risk, infection control improvisations, patient pathways, and the production of clinical evidence. Subsequent Liberian studies, particularly the "Endemic Lassa Fever in Liberia"

series (Monson et al. 1984) and John Frame's (1989) clinical synthesis, expanded on this concept by describing heterogeneous mortality, identifying hemorrhage as a marker of severity, and exploring the variable impact of sequelae, such as hearing loss. Taken together, these studies depict Liberia as a site where endemicity, hospital work, and scientific categorization were coproduced, rather than as a peripheral add-on to Nigerian or Sierra Leonean narratives.

While Liberia's 1972 outbreak established Lassa as a nosocomial hazard, Sierra Leone's early epidemics established it as a zoonotic and ecological problem, making rodent-human relations central to the understanding of the disease. In the early 1970s, researchers in Sierra Leone investigated patterns of household clustering and hospital admissions, assembling the now-canonical claim that the multimammate rat (*Mastomys natalensis*) is the primary reservoir host (Monath, Maker, et al. 1974; Fraser et al. 1974). The iconic demonstration came in 1974 when Monath (1974) and his colleagues reported isolating the Lassa virus from wild multimammate rats in houses associated with human cases. This extra-human cycle decisively shifted the focus of prevention strategies toward domestic ecologies, food storage, rodent control, and housing conditions. Later household studies refined this ecology by showing focality: Infection was not evenly distributed, but rather clustered sharply at the micro scale in such a way that hotspots could exist at the level of particular houses or compounds (Keenlyside et al. 1983). More recent ecological studies complicate the singular-host narrative without discarding it, describing additional potential hosts while retaining *Mastomys* as the dominant explanatory actor in most endemic settings (Olayemi et al. 2016). This body of work is crucial as it establishes a way of thinking in which endemicity is understood through the lens of landscapes and domestic life: The geography of the disease is explained by

commensal rodents, household architecture, and everyday practices, thereby making "where one lives" appear epidemiologically determinant.

Building on this ecological foundation, a substantial body of epidemiological literature has sought to define the contours of what many now call the "Lassa belt," even though authors consistently acknowledge that maps of risk are also maps of sampling and diagnostic capacity. Lo Iacono (2015) and his colleagues' influential analysis highlights how patchy surveillance and uneven testing capacity can distort incidence estimates, while still proposing structured ways to infer underlying burden. Diagnostic reviews echo this point, noting that because clinical presentation overlaps with common febrile illnesses and laboratory capacity is often centralized or intermittent, large proportions of cases remain underrecognized, especially outside of specialized sites (Happi, Happi, and Schoepp 2019). Meanwhile, phylogenetic research has reshaped regional history by showing how viral lineages cluster geographically, with multiple lineages in Nigeria and a major lineage shared across Guinea, Sierra Leone, and Liberia. This research also emphasizes that the virus is not a single, stable entity, but rather a diverse family, which has implications for assays and vaccine design (Bowen et al. 2000). The result is a paradox: the more the literature insists that Lassa is endemic and widespread, the more it must also acknowledge that endemicity is partially produced by the infrastructures that detect it. This paradox is not merely methodological, but also historical and institutional because it brings us back to the hospitals and laboratories that convert fever into confirmed Lassa cases.

Similarly, clinical management literature reveals how Lassa's history is intertwined with specific treatment protocols that gained authority under conditions of

limited evidence. The 1980s landmark ribavirin study by McCormick (1986) and colleagues, has long served as the cornerstone for antiviral use, arguing that ribavirin can reduce mortality, particularly in severe cases if administered early (see also Salam et al. 2022). Yet, subsequent critical reassessments and systematic reviews have stressed the fragility of that evidentiary base, pointing to risks of bias and the need for better-designed trials, while also acknowledging why ribavirin became entrenched as a pragmatic option when alternatives were absent (Salam et al. 2021; Eberhardt et al. 2019; Cheng et al. 2022). Pregnancy-focused studies further highlight how hospitals become sites where the moral and clinical stakes of Lassa fever concentrate. In Sierra Leone, for example, prospective work documented high maternal and fetal risks, making obstetric wards and referral pathways central to both patient outcomes and epidemiological visibility (Price et al. 1988). In parallel, operational accounts from rural hospitals demonstrate that specialized Lassa treatment is often limited to a few facilities because it necessitates costly medications, trained staff, and reliable confirmation—conditions that are rarely widespread (Dahmane et al. 2014). This is the clinical-political backdrop against which Liberian referral hospitals, such as Phebe, matter; they are not just sites of care but also bottlenecks where suspicion, confirmation, and therapy converge.

Within Liberia, the literature traces the persistence of Lassa through alternating periods of attention and relative obscurity, punctuated by institutional investments that expand what can be diagnosed and where. Contemporary analyses of Liberian surveillance data describe recurrent outbreaks and shifting case distributions across counties. These analyses highlight both endemic persistence and the role of health system capacity in shaping confirmed case counts (Bloch 1978; Dwalu, Jetoh, et al. 2024). National planning and partner documents likewise suggest that laboratory

capabilities notably expanded after the Ebola crisis, with Lassa being among the diseases that are increasingly included in testing repertoires (Nyenswah 2022; World Bank 2021). This expansion matters because it changes what can be officially "seen" and therefore contributes to rendering the "belt" more visible through timely Lassa test results.

B). CEPI's Enable Lassa Research Program at Phebe Hospital

The arrival of the Coalition for Epidemic Preparedness Innovations' (CEPI) research funding in Liberia's Lassa landscape should be understood within the broader context of Lassa fever's evolution from an endemic regional problem to a global priority for vaccine development, in which knowledge gaps about the true incidence of Lassa fever have hindered this progress. CEPI emerged in the wake of the 2014–2016 West African Ebola crisis as a coalition built for the purpose of financing and coordinating research and development (R&D) for vaccines against epidemic threats that markets routinely neglect. It was formally launched at the World Economic Forum in Davos in January 2017 and positioned itself as a bridge between philanthropic capital, governments, industry, and academic science (Sandberg et al. 2020; CEPI 2017). In CEPI's early framing of its goals, Lassa fever was not incidental, but rather, it was emblematic: a recurrent, lethal viral hemorrhagic fever with substantial under-detection, limited countermeasures, and high uncertainty about where and when vaccine efficacy trials could feasibly be run. The WHO's R&D Blueprint further solidified this positioning by listing Lassa fever among the pathogens requiring urgent research action, thereby shaping Lassa as not just a national concern but as a global R&D problem (WHO 2016a, 2019b).

CEPI's subsequent Lassa portfolio, which funds multiple vaccine candidates and supports partners such as IAVI (International AIDS Vaccine Initiative) (Grant 2018), demonstrates how its interest in Lassa is both scientific (focusing on platforms, immunogenicity, and correlates of protection) and infrastructural (focusing on trial sites, diagnostics, and governance) (CEPI n.d; Christodoulou 2018). However, this vaccine-focused agenda was confronted with a practical impasse: without reliable estimates of Lassa virus infection and Lassa fever disease incidence across different endemic regions, questions such as "where to test," "how many participants to enroll," and "how long to follow" remained challenging to answer in a manner that would satisfy regulators and funders (CEPI 2022b; Penfold et al. 2023). In light of this gap between the aspiration to develop vaccines and the uneven evidentiary ground needed to evaluate them, CEPI established the Enable Lassa Research Program, which is regarded as a strategic knowledge infrastructure rather than just another epidemiological study.

Designed as CEPI's flagship effort, Enable aimed to generate epidemiological and operational evidence for late-stage vaccine evaluation while strengthening site capacity across West Africa. CEPI documentation describes Enable as the largest Lassa fever research program of its kind, launched to improve the understanding of the "true" disease burden and to guide vaccine development by prospectively following large cohorts across multiple countries (Penfold et al. 2023; CEPI 2020). The program's core protocol explicitly links burden estimation to trial feasibility. It aims to measure the incidence of Lassa virus infection and Lassa fever disease, as well as to determine the feasibility of future late-stage clinical trials for Lassa vaccine candidates, acknowledging that routine surveillance is often insufficiently robust to provide these parameters (Penfold et al. 2023). CEPI's 2021 announcement expanding Enable beyond Nigeria emphasized this

logic by tying additional funding to a broader regional footprint, including Liberia, so that incidence and transmission dynamics could be assessed in varied ecological and health system contexts rather than being inferred from a single classic hotspot (CEPI 2021). Similarly, the mid-term program reporting frames Enable as a response to an urgent knowledge gap that must be filled before vaccine trials can be credibly planned and interpreted, presenting Enable as an enabling platform for vaccine science rather than a stand-alone public health survey (CEPI 2022b). This framing is important for understanding how Phebe Hospital fits into the story. The hospital has evolved from a site dedicated solely to isolating and treating suspected Lassa cases to a place where evidence is actively produced about Liberia in the regional Lassa geography through cohort follow-up, febrile surveillance, and laboratory confirmation (Mandi et al. 2025; Penfold et al. 2023). In other words, Enable helps to define the operational meaning of "endemicity" by making it measurable and comparable across sites, while also recentering particular institutions as gateways through which endemicity becomes visible.

In Liberia, the program has been anchored at Phebe Hospital in Bong County, and crucially, it has been implemented by an American university as the lead research institution on the ground. The team formed by this implementing university and local Liberian researchers collaborated with Phebe Hospital and Liberia's National Public Health Institute (NPHIL) to establish real-time PCR testing for the Lassa virus at Phebe Hospital, turning the hospital's laboratory into a centerpiece of the implementing university's research operations at the site (Wohl et al. 2026). Appreciation for this enhanced diagnostic capacity was evident in previous Enable workshop materials, which emphasized that the Lassa study-affiliated molecular laboratory at Phebe Hospital was

responsible for PCR testing and reporting timely results for Enable-related and routine, hospital-managed, suspected Lassa cases (CEPI 2022a). This reveals how research diagnostics and clinical care diagnostics were interwoven in daily practice at Phebe Hospital. The design of later Enable phases continues to position Phebe Hospital as a participating site in Liberia, indicating that this collaboration is not transient, but rather a sustained infrastructural commitment through which a single rural referral hospital becomes a durable node in CEPI's regional evidence-making architecture (Mandi et al. 2025). What this means analytically is that Phebe's importance is not only historical, with mission-era referral pathways and decades of viral hemorrhagic fever management, but also programmatic. It is one of the places where Lassa burden is actively translated into trial-relevant metrics, and where infrastructures of confirmation, such as PCR capacity, sample pathways, data systems, and trained personnel, are assembled and stabilized (Wohl et al. 2026). Framed this way, Enable does not merely take place in the Lassa belt; it participates in making the belt legible as an epidemiological object and a research-ready landscape, with the implementing university acting as the institutional hinge that ties Phebe's clinical pathways to CEPI's transnational vaccine-development horizon. Enable exemplifies how research programs can reconfigure what a hospital is—simultaneously a site of care, a diagnostic bottleneck, and a knowledge-production platform—without reducing the reconfiguration to progress or exploitation alone.

C). Contextualizing Bong County

Bong County, one of Liberia's fifteen counties, is located in north-central Liberia and is one of the country's major population centers. According to the Liberian 2022 Population and Housing Census, Bong has a population of 467,561, making it the third

largest county by population after Montserrado and Nimba. Its land area is reported at roughly 3,387 square miles (8,770 square kilometers) (LISGIS 2022). The county is administratively divided into twelve districts, which structure health reporting, referral pathways, and the uneven distribution of clinics, roads, and surveillance staff across rural settlements. Bong's regional position is defined by borders that make it both a corridor and a hinge. It borders Bomi, Montserrado, and Margibi to the west, Lofa and Gbarpolu to the north, Nimba to the east, and Grand Bassa to the south, and touches Guinea to the northeast (Fig. 2). These borders are not merely cartographic; they reflect long histories of movement—trade, seasonal labor, wartime flight, and routine travel to and from Monrovia—that concentrate people and commodities along the central highway and at key junctions.

Figure 2: *Bong County's location in Liberia (from mapsofindia.com).*

Ethnographically, Bong is a place where “the local” is repeatedly made and unmade by flows. The county is predominantly Kpelle, with Mandingo communities especially concentrated in towns along the highway, and smaller groups present through migration and postwar resettlement patterns (Reeve and Speare 2010). Bong’s central location is relevant not because borders “cause” Lassa, but because they help to explain why a disease framed as rural and rodent-linked is nevertheless encountered through road travel, referral systems, and the politics of where care and research become possible.

Bong’s political economy reinforces this mobility profile because livelihoods and infrastructure are rooted in the history of extraction and plantations that have repeatedly reorganized settlements and labor. Historically, the county has been tied to iron ore through the Bong Mine complex, an emblem of industrial boom-and-bust whose afterlife includes renewed corporate investment and regulatory contestation from the 2000s to the present day (Wilson et al. 2017; Reuters 2024; Reeve and Speare 2010). Alongside mining, rubber and other plantation and agro-industrial activities have shaped the landscapes and labor wage, creating micro-corridors of worker housing, food storage practices, and peri-domestic ecologies that can intensify contact between humans and rodents, even when the immediate setting is not a forest (Reeve and Speare 2010; Dwalu, Jetoh, et al. 2024). Bong County is also a knowledge and training hub. This matters because educational institutions attract students, staff, and visitors from other districts and counties. Cuttington University in Suakoko is a long-standing national institution, and the Bong County Technical College in Gbarnga, the capital city of Bong County, is another regional attraction (Cuttington 2024; BCTC. n.d). In Suakoko, the Central Agricultural Research Institute (CARI) is another magnet for professional circulation,

training events, and field programs that connect rural communities to national and transnational development networks (CARI 2014). Taken together, mines, plantations, universities, and research institutes do more than simply modernize the county. They produce the patterned movement of bodies and goods that connects villages to district towns and district towns to Monrovia and borderlands. For Lassa, the analytic payoff is subtle yet significant: mobility is less about the rapid spread of person-to-person contact (which is not the dominant route) and more about how livelihoods and infrastructure reconfigure everyday exposures, such as shaping housing density, storage, sanitation, and displacement, as well as the practical logistics of detection, including who reaches a facility, when, and through what social negotiations (Dwalu, Jetoh, et al. 2024).

War and displacement sharpened these dynamics, leaving lasting traces on the county's humanitarian and medical landscapes. Bong was devastated during Liberia's civil war, and the political and military centrality of Gbarnga made the county a strategic space that was repeatedly fought over, resulting in large-scale displacement and the recurrent disruption of rural life (Reeve and Speare 2010). In such contexts, hospitals become more than clinical sites; they become infrastructures of refuge, triage, and moral claim-making, even when they themselves are targets, looted, or forced to relocate. Phebe Hospital, a key referral facility in central Liberia, was affected by insecurity to the point that services were relocated during periods of intensified conflict, a reminder that health systems in Bong have been mobile and improvised rather than stable (International Review of the Red Cross 2013; Miller 2011). Accounts linked to the Lutheran medical landscape emphasize the repeated destruction and evacuation of the hospital during the war while maintaining a commitment to treating people in need, shaping Phebe into a sheltering institution in practice—not because it was safe, but

because it was one of the few places where people could seek and receive care (International Review of the Red Cross 2013; Sidenvall n.d). In this context, the co-location of Phebe Hospital with major training programs becomes salient. Phebe is often referred to as Phebe Hospital & School of Nursing, as it incorporates a school where training in midwifery and other healthcare roles is supported through national and partner channels, reinforcing its role as a care site and an educational hub (Miller 2011; Phebe Hospital n.d). The movement of students, interns, and rotating staff is therefore not a minor detail; rather, it is part of the county's "medical mobility," influencing who learns infection control, who carries stories about the IU, and how reputations circulate back into communities.

From an epidemiological standpoint, Bong has been profiled as an "endemic county." Since 2016, Liberia's surveillance analyses and peer-reviewed studies have shown that confirmed Lassa cases have been reported across multiple counties, with Bong, Nimba, and Grand Bassa consistently accounting for a large share of cases in recent years while other counties report more sporadically (Dwalu, Jetoh, et al. 2024; Jetoh et al. 2022). National and WHO-supported surveillance bulletins (including Integrated Disease Surveillance and Response products) document suspected and confirmed cases and outbreaks, including Bong-specific updates that situate the county within routine event-based reporting rather than exceptional crisis narration (NPHIL 2017). More recent NPHIL situation reports explicitly frame an outbreak timeline beginning in Bong County in January 2022 with cumulative confirmed cases and deaths (Fig.3), underscoring that the "hotspot" designation is maintained through ongoing classification work, laboratory confirmation, and repeated public communication (NPHIL 2024, 2025). A peer-reviewed synthesis of national surveillance data helps

connect disease to social conditions without slipping into ecological determinism. Analyses note higher risks in rural settings, where exposure to *Mastomys* is more likely, and describe how farming, food handling, sanitation, and crowded living conditions can intensify risk (Dwalu, Jetoh, et al. 2024; Jetoh et al. 2022). Taken together, these elements might also connect the county's endemicity to mobility histories, such as plantation labor, displacement, resettlement, and road-town growth, rather than to forest as a singular explanation.

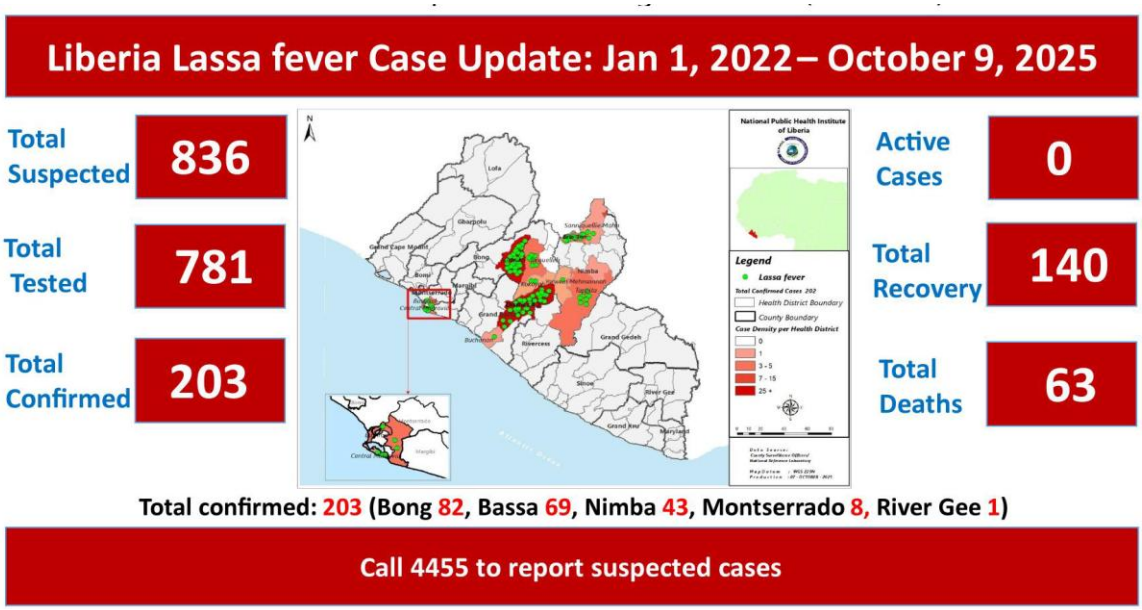

Figure 3: *A map summarizing the geospatial distribution of Lassa fever cases reported in Liberia from January 1, 2022, to October 9, 2025, with the majority of cases concentrated in Bong County (by NPHIL 2025).*

D). Fieldwork in Bong County

In August 2023, I arrived in Bong County to begin fieldwork at Phebe Hospital and in the nearby communities of Phebe Airstrip, Suakoko, and Rubber Factory—localities that were also involved in an ongoing, multicountry Lassa research effort under CEPI's Enable program. The first weight that pressed on me was not a map, a case definition, or an incidence estimate, but the choreography of entry: a gate, a rope barrier, a guardhouse, and an arrangement of screening practices that made passage into the hospital compound feel conditional and reversible. Such infrastructures did not just "protect" the hospital; they created an everyday relation between mobility and suspicion, and between the right to enter and the obligation to be checked. The presence of pandemic leftovers—the handwashing tank and the "NO MASK, NO SERVICE" sign whose authority had faded—also signaled the material persistence of outbreaks in viral atmospheres over time. In that sense, my arrival was not only the beginning of a study, but also an encounter with layered temporalities of risk, where triage and security reminded me that viruses are often managed through the governance of bodies in motion. Methodologically, the multi-sited nature of my research became clear at this point: I was studying more than just "a disease" or "a hospital." I was also studying the connections that tied wards to villages, surveillance to care, and research routines to everyday life. Following Marcus (1995), I approached the field as a set of linked sites and circuits—people, documents, samples, money, rumors—rather than a specific location that could be fully described from within.

As a trained medical doctor entering the hospital as an ethnographer, I initiated my research with forms of participation that were institutionally legible: joining staff

meetings, observing patient flows, and learning how services were organized across the compound. This initial period was less about extracting "data" than about acquiring the practical literacy necessary to discern what constituted normal work under conditions of uncertainty and shortage. Hospital ethnographies in Africa repeatedly demonstrate that care is not merely a technical application of biomedical knowledge, but a situated labor of improvisation, triage, and moral negotiation, conducted amid uneven supplies and unstable infrastructures. For instance, Livingston's (2012a) account of an oncology ward in Botswana highlights how scarcity reorganizes clinical time and recalibrates what can be promised to patients, while still sustaining strong ethical commitments in practice. Wendland's (2010) ethnography of medical training in Malawi similarly illuminates how professional ideals are cultivated alongside resource constraints, producing clinicians who learn to translate biomedical standards into workable local forms rather than simply lamenting what is missing. The present study draws on this tradition not as an external commentary on Phebe, but as a methodological reminder: a hospital is a social world with its own rhythms of accountability, its own hierarchies of knowledge, and its own everyday negotiations between "what should happen" and "what can happen." Participant observation in such settings, as is emphasized in classic ethnographic method texts (Hammersley and Atkinson 2019; Emerson, Fretz, and Shaw 2011), requires sustained presence and reflexive attention to one's shifting position within those hierarchies. As time progressed, my clinical background facilitated certain conversations—particularly with clinicians discussing fever differentials, laboratory uncertainty, and treatment decisions—while also obliging me to repeatedly clarify that my role was not to audit performance but to comprehend lived practice.

From these general orientations, I gradually focused on the Lassa isolation unit (IU), where suspected and confirmed cases were admitted. Entering the IU drew my attention to how infection control is enacted as a set of routinized thresholds—donning and doffing spaces, controlled movement, and monitored contact—rather than as a stable state of containment. In my observations, the IU did not stand apart from the rest of the hospital as a sealed zone. Instead, it depended on staffing patterns, supply chains, and clinical decision-making that continuously linked it to the emergency room, laboratory, and other wards. Ethnographies of humanitarian medicine and high-risk care often emphasize that the moral weight of "saving lives" is carried through practical work—classification, prioritization, and constant recalibration—rather than through heroic moments alone (Redfield 2008; Fassin 2012). In this sense, the IU was also a site where ethical questions about exposure, obligation, and protection were addressed through everyday decisions: who enters? With what training? For how long? And with which protective materials? My data collection in the IU combined participant observation, informal conversations with admitted Lassa patients and their caretakers, and targeted interviews with staff, as well as document work, such as reviewing registers, standard operating procedures (SOPs), and the everyday paperwork through which admission, treatment, and discharge are made accountable. Importantly, I treated these documents not as transparent mirrors of practice, but as artifacts that reveal how global categories (e.g., suspected case, confirmed case, discharged, died) are translated into local routines. This approach enabled me to describe the institutional life of protocols without duplicating the chapters' substantive analyses of survivorship or caregiver dynamics. Here, the focus remained methodological: how the ward's ordinary operations

became observable and how my presence was negotiated within them (Livingston 2012a).

Beyond the IU, I visited the county health team office, which is located on the hospital grounds. There, I spoke with surveillance officers about the county's Lassa situation and the practicalities of case investigation, reporting, and follow-ups. The proximity of a treatment unit to surveillance staff is important ethnographically because it reveals the coproduction of "cases" and "care": numbers and narratives, laboratory confirmations and bedside decisions, lists of cases and actual risk. Scholarship on public health in African settings has long argued that institutions are formed and dissolved through such everyday work, where the boundaries between state systems, partner projects, and mission-based facilities remain porous. Geissler's (2015) notion of "para-states," for example, is useful for considering how global health knowledge production often occurs through assemblages of agencies, donors, and research programs operating alongside (and sometimes through) national structures. At Phebe Hospital, this broader ecology was not abstract; it manifested in offices, training sessions, reporting channels, and laboratories, and it shaped the types of questions that could be asked and the types of evidence that would be considered valid. During my fieldwork, I visited the hospital's enhanced laboratory, where PCR-based Lassa testing was performed, paying attention to how diagnostic capacity reorganizes clinical suspicion and how results travel between lab benches, clinical registers, and surveillance reports. The importance of this laboratory as part of the diagnostic infrastructure feeding into the national response to Lassa has been emphasized (Wohl et al. 2026). Without making the laboratory the focal point of the narrative, I viewed it as one

node in a broader chain through which the county's "Lassa belt" is administratively realized.

My relationship with the Enable Lassa research team, whose office was also located on the hospital premises, exposed another dimension of this ecology: the politics of access within knowledge production itself. Although I sought to follow fieldworkers during community blood sampling to observe their interactions with the study participants—not to extract epidemiological data—the coordinating team declined my request, citing confidentiality and limits on authorized introductions. This refusal was not merely an obstacle to be overcome; it became a finding about boundaries, ownership, and the moral economy of research work. Anthropological studies of global health research repeatedly demonstrate that trials and cohort studies generate institutional value such as credibility, funding opportunities, and publication potential, in a way that means that control over access can be perceived as control over this value. Crane's (2013) work on the rise of American global health science and Petryna's (2009) analysis of the global search for human subjects both highlight how knowledge infrastructures are accompanied by gatekeeping practices that manage confirmed risk as "ethical" while securing institutional advantage. Cooper and Waldby's (2014) concept of "clinical labor" further emphasizes how participation, whether through specimens, follow-up visits, or compliance with protocols, becomes a site where value is generated and contested. In this light, the research team's insistence on channeling my entry through community leaders rather than participants signaled an institutional logic: protect participants, protect data, and protect the project. Ethnographically, I treated this as a form of boundary work rather than personal mistrust, and I turned to other routes of village

immersion that respected these constraints while still allowing me to understand how the research presence was perceived and negotiated locally.

Therefore, fieldwork in the three study communities proceeded through relationships with local gatekeepers, such as community leaders and young residents, including Lassa fever survivors, rather than through the formal shadowing of research staff. This approach was important analytically because it emphasized how "research in the community" is experienced from the perspective of everyday social life rather than from the perspective of project design. Consistent with multi-sited ethnographic sensibilities (Marcus 1995), I did not treat the villages as culturally bounded units, but rather as places structured by mobility: residents moved between farms, markets, schools, and hospital jobs; relatives circulated across districts, and people's stories linked household histories to institutional timelines. The communities themselves were differently positioned in relation to the hospital: Phebe Airstrip was directly adjacent to the hospital compound; Suakoko was located along the main Monrovia-Gbarnga road; and Rubber Factory was situated on the outskirts of Gbarnga.

Among these three study villages, Phebe Airstrip possesses a distinctive narrative associated with Phebe Hospital. According to several informants, the appellation "Phebe Airstrip" — the village was formerly known as "T.T. Harris Community" — is derived from the airstrip of Phebe Hospital, located across the hospital compound, which served as a crucial transportation hub for missionary aircraft at the time. During this period, missionary health workers utilized the airstrip to transport patients and pregnant women from remote villages to the hospital. A portion of the airstrip has now been converted into a football field (Fig. 4.B), providing an opportunity for young people from Phebe Airstrip to

engage in sporting activities. According to one of my informants, most of the initial residents at Phebe Airstrip were employees of Phebe Hospital. This was because the hospital served as a prominent attraction for individuals from neighboring counties, including Lofa, who sought employment following its establishment in 1965. He further noted that the area now occupied by the Phebe Airstrip Community was previously under rubber plantations owned by the Harris family, thus explaining the community's original appellation before its subsequent designation as Phebe Airstrip. With the arrival of workers, the owner family gradually leased land to newcomers who built there in order to live in close proximity to the hospital, their workplace. This reality is still evident in the current population of the area, as the majority of the village's residents are not only hospital workers, but also students and personnel from the various training centers located in the area, namely Cuttington University and Phebe Nursing School.

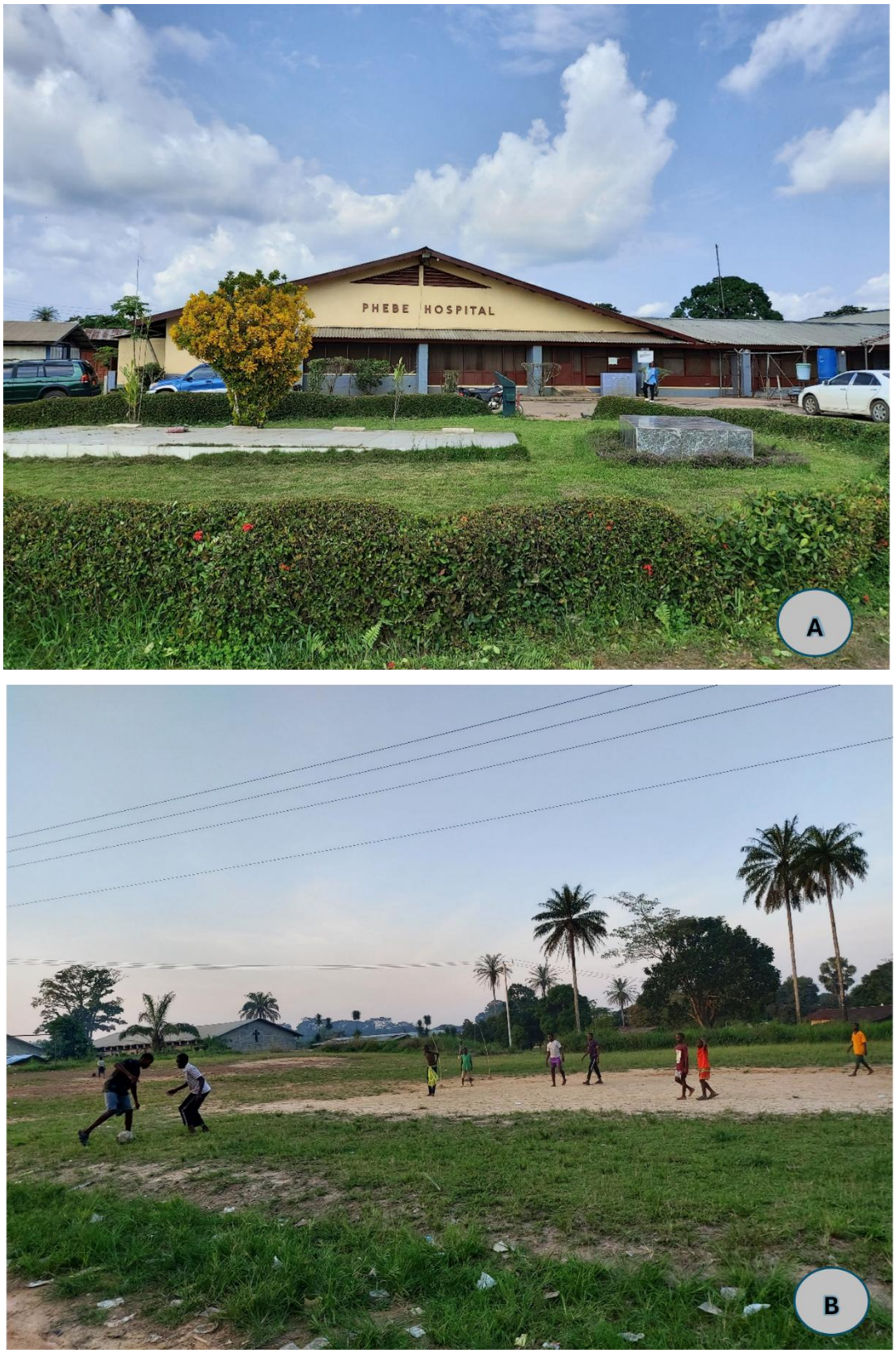

Figure 4: *A). Phebe Hospital. B). Former airstrip converted into a football field in Phebe Airstrip Community.*

At each site, I conducted long informal conversations and semi-structured interviews and made repeated visits to everyday social spaces, such as football pitches, bar shops, tire repair shops, and roadside seating areas, where discussions about illness, work, and uncertainty could arise naturally. Rather than asking people to describe Lassa fever in the abstract, I paid attention to moments when Lassa emerged as a practical concern, such as a death that reorganized household finances, a hospital referral that triggered fear, a research visit that raised expectations, or a persistent symptom that complicated the meaning of recovery. Ethnographic method guidance emphasizes that trust is built not only through ethical paperwork, but also through time, reciprocity, and repeated presence, especially when the topic is sensitive and the setting is politically saturated (Hammersley and Atkinson 2019). Therefore, my inability to follow blood sampling did not end the inquiry in the villages; it shifted the focus from the performance of research to the social worlds that research enters.

Throughout my time in the hospital and village settings, my clinical background repeatedly shaped the field in productive yet ethically demanding ways. People did more than just “give interviews”; they asked questions, tested my explanations, and sought interpretive clarity about the unevenness of infection. They sought to know why some close contacts remained well while others fell ill, why symptoms varied, and why laboratory confirmation could seem implausible in light of local experience. These exchanges were important not because they resolved biomedical uncertainty but because they illuminated how uncertainty is experienced and reasoned with, and how explanatory work becomes part of social coping. Kleinman’s (2020) assertion that illness is experienced through meaning-making practices enabled me to treat these inquiries as ethnographic material rather than as distractions from data collection. At the same time,

the Enable program's own protocol of biweekly follow-ups to detect acute febrile illness and RT-PCR testing for suspected cases highlights the operational challenge that residents also identified: Lassa can be difficult to recognize clinically, and fever is never a straightforward sign in malaria-endemic settings (Penfold et al. 2023). The overlap between research designs and everyday doubts was a recurring methodological issue; my conversations were shaped by the same diagnostic ambiguities that structured clinical triage and surveillance routines. In parallel, scholarship on trust in Liberian health systems after crisis underscores that confidence in care is socially produced and fragile, shaped by past experiences of responsiveness, affordability, and perceived competence—conditions that color how people interpret hospital treatment and research presence (Svoronos, Macauley, and Kruk 2015). Thus, my positionality was never neutral; I was perceived as someone who could provide clarity, advocacy, or even discreet intervention. I had to navigate the line between being helpful and stepping out of the ethnographic frame.

This dissertation is based on seven months of fieldwork conducted in 2023 and 2024. It combines hospital ethnography, village immersion, interviews, and document analysis across the institutional and social landscape that makes Bong County legible as a "Lassa belt." Historically and practically, Phebe Hospital anchors this landscape: first founded in 1921, it was later relocated inland in 1965 to serve central Liberia (Miller 2011). It has persisted through periods of conflict and institutional strain, including the civil war years, when it continued to function as a crucial site of care (International Review of the Red Cross 2013). This history is not merely background color; it helps explain why the hospital is experienced locally as both refuge and risk, and why so many livelihoods, mobilities, and expectations are tied to it. Contemporary Phebe is

inextricably linked to its position as a research site, including its incorporation into CEPI-supported epidemiological work through the Enable Lassa Research Program and the diagnostic infrastructures developed with the research operations in Liberia (Wohl et al. 2026; CEPI 2020). The chapters provide analysis while this fieldwork account establishes the practical ground on which analysis is based: the gate that disciplines entry, the IU that compounds the weight of the viral atmospheres, the village that translates research into everyday terms, and the ongoing effort to negotiate access across unequal regimes of knowledge. In that sense, the dissertation's central concepts are not imposed from above. Instead, they are traced from the material and relational work through which viruses become socially significant, manifesting in movements, documents, rumors and routines, long before they are theorized.

E). Outline of the Chapters

The dissertation's conceptual move—from broad disease spatialities to the local making of a "Lassa belt," to the lived density of viral atmospheres, and ultimately to the practical aspects of care and containment—follows a methodological framework built on connections rather than a single bounded field site. I track how categories travel and become consequential: how regional risk is produced through histories of mapping and classification, how that risk becomes localized and referred to as a "belt," how it becomes felt as atmosphere, and how it manifests in the routines and dilemmas of hospital work and everyday life. This is not a linear story of "better preparedness," but an account of how endemicity is assembled through infrastructures, research programs, clinical protocols, rumors, and obligations that unevenly distribute burdens across people and places. The central questions are therefore simultaneously historical and

ethnographic: how have sociopolitical and intellectual dynamics shaped Lassa research in West Africa, and how have these dynamics become embedded in specific institutions and communities in Liberia? How did Bong County—and Phebe Hospital in particular—come to be positioned as a pivotal node in a wider geography of Lassa knowledge, diagnosis, and intervention? What does it mean to live in a place that is repeatedly designated as risky, and how do such designations shape the conditions under which research becomes acceptable, care becomes sought or avoided, and survival becomes socially legible? In framing these questions, I treat "belt" and "hotspot" not as neutral descriptors but as technologies of classification that organize attention, funding, and ethical expectations, as they become "real" through their effects (Bowker and Star 1999). I also treat viral atmosphere as an analytic for the relational intensities through which contagion becomes sensible—an emergent quality of spaces shaped by material residues, institutional routines, and social memory (Böhme 1993; B. Anderson 2009). Across the dissertation, "weight" refers to how these intensities accumulate over time and how their burdens are carried and contested, rather than merely anticipated. The chapter sequence is designed to keep this double lens—historical production and lived experience—continuously in view.

Chapter 1 situates Lassa research within longer traditions of medical geography and the political economy of global health knowledge. It shows how West Africa has repeatedly been portrayed as a space of risk and promise through spatial imaginaries that render certain landscapes available for scientific extraction and investment, while obscuring the inequalities that determine who bears the costs of disease visibility. Rather than narrating a steady accumulation of scientific progress, the chapter argues that Lassa research has unfolded through cyclical surges of attention and neglect—boom-

and-bust patterns that remain driven by external geopolitical dynamics, fluctuating funding regimes, and crisis-oriented visibility. This is the chapter where the dissertation's spatial vocabulary is anchored: the "hotspot" is treated as a political and epistemic formation, rather than a purely ecological fact, and Bong County is analyzed as a place where research infrastructures are embedded into local institutions and reputations. Chapter 2 then shifts focus from the genealogy of risk space to the lived social conditions through which research becomes actionable in villages. Here the "Lassa belt" is analyzed as a technology of place that can simultaneously normalize participation—by framing serosurveillance as what endemic places are meant for—and intensify a sense of perpetual scrutiny, as if villages are continuously under suspicion. The chapter conceptualizes compensation not as a simple ethical add-on but as part of a local moral economy in which invasive procedures are translated into negotiable claims and immediate returns, producing a vernacular contract of exchange—blood for cash. Drawing on critical scholarship on trials and research economies, the chapter frames participation as a form of value production that is morally justified, pragmatically sought, and politically contested rather than being either straightforwardly voluntary or coerced. Together, chapters 1 and 2 establish how spatial designations and research practices coproduce "the belt" as both a category of knowledge and a lived field of obligation, expectation, and contestation.

Chapter 3 shifts the analytical focus from the research exchange to the experiential and affective weights of living with the constant threat of viral infection. The chapter introduces the concept of the "viral atmosphere" to explore epidemics as not only biological events, but also emotional and spatial formations through which fear, hope, memory and uncertainty circulate and command action. It traces survivorship

across two emotionally charged spaces: the isolation unit during illness and the community after discharge, where the aftereffects of the illness and social anxieties complicate reintegration. “Weight” is most evident here as accumulation—of anticipatory grief, of stigma, of the lingering sense that danger persists even when clinical recovery is declared—and as distribution, because survivorship is never borne solely by survivors, but also by kin, neighbors, and the institutional reputations that organize care-seeking.

Chapter 4 brings the dissertation into the practical ethics of containment by examining how formal infection prevention and control (IPC) logics are negotiated through kinship and scarcity. The chapter focuses on the role of mothers as carers inside the IU, presenting their admission with their children as an unorthodox yet locally necessary arrangement that sustains clinical work while creating new vulnerabilities and blurring accountability. The chapter situates this arrangement within hospital ethnographies that foreground care as relational labor—improvised, morally charged, and dependent on family work—rather than as the seamless implementation of protocols. By ending with caregiving and containment, the dissertation returns to the institutional threshold where it began, but with a clearer assertion: in Bong County’s Lassa belt, research, survival, and care are not separate domains, but interconnected practices through which viral atmospheres acquire weight and through which the politics of living-with becomes visible.

Chapter 1

The Boom-and-Bust Patterns of Biomedical Research in Bong County's Lassa Belt of Liberia

1.1. Introduction

The Western world's anxiety about tropical West Africa helped shape the region's image as "The White Man's Grave" in the late eighteenth to early nineteenth centuries. This image gained traction as European engagement in the region increased and reports of high mortality among Europeans were widely circulated and sensationalized (Curtin 1961). Since this period, the region (and the African continent at large) has become a favorable terrain for Western biomedical research. The history of this image is shaped by colonial legacies, postindependence scientific developments, and shifting global health priorities throughout the African continent. Historically, a significant proportion of Africa's biomedical research was driven by external interests, with a focus on tropical diseases that posed a threat to the capitalist interests of Western colonial settlers on the continent (Bruchhausen 2020; Burke-Gaffney 1968). Colonial settlements thus became conditioned to the fight against tropical diseases that threatened settlers in newly acquired territories, resulting in research initiatives to control sleeping sickness, malaria, hookworm, yellow fever, smallpox, and schistosomiasis throughout the continent (see Tilley 2011). To illustrate the scale of research initiatives undertaken on the continent, historian Helen Tilley (2011, 171) once described Africa as a "living laboratory" (or a "field laboratory") where, she argued, "virtually every territory served as a space for biomedical

experimentation on a massive scale", highlighting the exploitative nature of research practices during colonial times.

Imagining tropical West Africa as a white man's grave has reinforced spatial conceptions of disease. Central to these efforts was the enormous contribution of medical geography—a subdiscipline developed in the nineteenth century in Europe—which sought to demonstrate the relationships between disease and environmental factors (see Brömer 2000, 176; Rupke 1996). Medical geography emerged as a critical field that enabled the understanding and management of health patterns and profoundly influenced colonial expansion and settlements in tropical Africa. Rooted in ancient observations of environment-disease relationships, particularly those in the Hippocratic treatise *On Airs, Waters, and Places* (see Lloyd 2003, 210; M.A. Osborne 2000), the field gained scientific rigor in the nineteenth century through systematic disease mapping, which colonial powers later leveraged to advance territorial control and public health agendas.

During this period, medical geography (with disease mapping as its central tool) served French colonialism and military medicine as a means of colonial expansion, particularly in campaigns in North and West Africa. Faced with high mortality rates among soldiers and administrators, French military doctors sought to understand the distribution of diseases such as malaria, yellow fever, and sleeping sickness by adapting and applying emerging techniques in statistical mapping, climatology, and disease surveillance. Mapping disease in colonial territories became a means of protecting European personnel and asserting control over the landscape, leading to

institutionalized systems of data collection and geographically informed disease control strategies (M.A. Osborne and Fogarty 2003; M.A. Osborne 2000).

Parallel developments occurred in German colonial medicine, which, though relatively short-lived, produced a robust body of research linking environment and disease. Before Germany's formal entry into African colonialism in the 1880s (Conrad 2013), German geographers such as Heinrich Berghaus played a formative role in shaping medical geographical thinking. Berghaus's 1848 map of diseases, one of the earliest world maps showing the geographical distribution of epidemic and endemic human diseases, became an inspirational source from which focused epidemiological maps developed (Camerini 2000). Such work helped to establish spatial frameworks that later guided German tropical research in colonial settings.

Building on this foundation, German scientists such as Robert Koch—working in East Africa—conducted field investigations that sought to correlate specific pathogens with environmental conditions. Inspired by both Hippocratic environmentalism and modern bacteriology, Koch's studies of sleeping sickness treated Africa as a scientific laboratory where environmental interventions were seen as tools of disease control and imperial governance (Eckart 2002). Geographic reasoning was central to this work, as spatial mapping of disease and vector habitats informed public health campaigns and supported territorial administration. German colonial medical geography thus combined cutting-edge laboratory science with older environmental frameworks, contributing to an increasingly technocratic vision of local disease control.

In the British Empire, particularly in African colonial contexts, medical geography emerged as a key tool for identifying and mitigating health risks to European

administrators and settlers. The pioneering cholera maps of John Snow in London (1854) provided a methodological model for using spatial data to identify environmental sources of disease (McLeod 2000; Sadler and Larsen 2022). In British West Africa, colonial health officials applied similar spatial-logical reasoning to the study and control of malaria. In Sierra Leone, for example, Sir Ronald Ross, a British physician famous for identifying the *Anopheles* mosquito as the vector of malaria (Chernin 1988), undertook a medical expedition to study malaria in 1899 (Frenkel and Western 1988). These efforts led to geographically targeted interventions such as swamp drainage, mosquito control, and the relocation of European quarters to higher grounds, which are among the earliest examples of environmental management informed by medical geography (Cole 2015). The strategic mapping of disease risk zones was designed to protect European personnel and advance colonial infrastructure projects, revealing the practical and political uses of health-related spatial knowledge in an imperial context.

Over time, the early interdisciplinary focus of medical geography gave way to the more specialized field of tropical medicine, particularly from the late nineteenth century onward. The Scottish physician Patrick Manson, often celebrated as the "father of tropical medicine," advanced new understandings of vector-borne diseases such as filariasis, malaria, and yellow fever, emphasizing the role of parasites and insect vectors in transmission (Cook 2007, 53). Manson's work marked a shift from broad environmental explanations to more microbiologically grounded ones, though often still rooted in a geographical framework. He was instrumental in founding the London School of Hygiene and Tropical Medicine in 1899, which institutionalized tropical medicine as a discipline and trained generations of colonial doctors (Cook 2007, 56). Across French, German, and British colonies, this transformation of medical geography into tropical medicine

maintained many of the environmental concerns of earlier approaches but reoriented them toward safeguarding European bodies from local pathogens.

The framing of West Africa as a space of pathological risk reinforced colonial hierarchies and racialized understandings of disease vulnerability, often marginalizing the experiences and health needs of colonized populations. As shown above, this characterization was driven by colonial medical research and public health interventions that focused on disease ecology and the region's environmental conditions, as well as its role in global health crises. It also perpetuated a narrow ecological vision—one that excluded Indigenous knowledge systems and overlooked the social determinants of health that shaped disease vulnerability in Africa (Farmer 2001; Curtin 1990).

A key term within this spatial imaginary was "endemicity." Originating in Hippocratic medicine, *endemic* was historically used to describe diseases that persist within a population or geography, in contrast to *epidemic* diseases, which appear episodically (see Swaroop 1957) or are introduced from outside (Steere-Williams 2022). During the colonial expansion into West Africa, endemicity became a diagnostic and cartographic tool. Diseases like malaria and yellow fever were not only biologically mapped but also embedded into the identity of the region. In 1900, for example, malaria was described as "the chief of the endemic diseases of the tropics…, the principal cause of sickness and death there…" (Frenkel and Western 1988) linking disease to the landscape itself. This conceptualization supported the colonial imperative to control disease as a means of securing safe settlement, driven by what Gregg Mitman (2024b) depicts as the "sustained extractive economies of empire".

The identification of “zones of endemicity” served a dual purpose: it protected European bodies through spatial management of disease, and it transformed West Africa into a critical site for the production of tropical medical knowledge (Wenzel Geissler 2015). As Helen Tilley (2011) has shown, the region functioned as a “living laboratory” where scientific knowledge was extracted in service of imperial and philanthropic interests. Institutions like the Rockefeller Foundation were pivotal in reinforcing this spatial framing. In the 1920s and ’30s, the foundation launched extensive yellow fever research in Nigeria, categorizing the region as a “hotbed” of the disease and establishing centers such as the Yellow Fever Research Institute in Yaba (Mitman 2024b; Vaughan 2018). Similarly, the Liberian Institute of the American Foundation for Tropical Medicine—later renamed the Liberian Institute for Biomedical Research (LIBR)—became a key player in the study of trypanosomiasis, malaria, leprosy, and helminthiasis in the 1950s in Liberia (Franz 1968).

Over time, the cumulative process of European colonial encounters, imperial medical reports, and epidemic outbreaks in West Africa reinforced the region’s association with disease reservoirs, leading to a shift toward a new spatial designation of the region by the late twentieth century: the “disease hotspot”. While endemicity implies permanence and local boundedness, *hotspot* emerged as a term of urgency and global implication. In the context of tropical medicine, the association of West Africa with recurrent diseases like malaria, yellow fever, and later Lassa fever and Ebola recast the region as not just persistently afflicted but actively threatening to global health security (Bass 1998; Lessler et al. 2017). This shift reflected changing epistemologies in public health and epidemiology, as well as the growing political economy of pandemic preparedness.

The term “hotspot” itself functions as a powerful spatial and conceptual signifier across disciplines. In ecology and conservation biology, for example, it designates areas of concentrated biodiversity under threat (see Myers et al. 2000), while in environmental science, it signals zones of ecological or climatic volatility (see Goyal, Gulia, and Goyal 2021). Across these fields, “hotspot” conveys intensity, concentration, and urgency—attributes that resonate deeply in disciplines concerned with crisis and strategic intervention. In public health and infectious disease epidemiology, the term has become central to identifying regions of intensified transmission, (re)emergence, or disease burden. To clarify its varied applications, Lessler et al. (2017) proposed subcategories like “burden hotspot,” “transmission hotspot,” and “emergence hotspot.” Although these distinctions lie beyond the scope of this analysis, the overarching category of *disease hotspot* remains useful for capturing how spatial designations of risk shape responses, trigger technical interventions, and frame global health strategies.

In tropical medicine specifically, “disease hotspot” has evolved from a descriptive epidemiological label into a potent epistemological frame—one that guides international research agendas, mobilizes funding, and legitimizes biomedical intervention. By the mid-twentieth century, this framing had drawn the attention of imperial governments, philanthropic institutions, and international health agencies (Tilley 2011, 173; Adetiba 2021). In this context, “disease hotspot” has become a form of biomedical capital—a spatial credential that not only denotes risk but also generates research opportunities, attracts infrastructural investment, and justifies the deployment of global health resources. Colonial and postcolonial regimes of medical knowledge production relied on this spatialization of disease risk to secure access and funding. The framing of West Africa as a hotspot for malaria, yellow fever, Lassa fever, and Ebola has allowed outside

research institutions, pharmaceutical companies, and global health actors to conduct large-scale trials and forge strategic partnerships (Tilley 2011; Adetiba 2021). This framing, I argue, has transformed the region into a research hub comparable to a form of biomedical capital in which, to quote anthropologist Emmanuelle Roth (2023), "a novel economy of health projects arose".

Anthropological work has critically interrogated this framing. In their analysis of viral hemorrhagic fevers, Brown and Kelly (2014) argue that the *hotspot* is not merely a geographic descriptor but a conceptual device that draws attention to the dense relational entanglements—ecological, infrastructural, political, and social—that characterize sites of disease emergence. Rather than treating hotspots as isolated or exceptional anomalies, they emphasize how these spaces emerge from historically sedimented processes of marginalization, extraction, and transnational connectivity. The hotspot, in their account, is a relational topology: a place where global circuits of labor, capital, health infrastructure, and ecological disturbance converge to produce the conditions for viral transmission. This anthropological lens complicates biomedical and technocratic uses of the term by foregrounding its role in rendering certain geographies intelligible—and governable—through the language of crisis. The hotspot becomes not just a space of viral emergence but a node in a wider assemblage of global health governance, surveillance, and investment. It is, in this sense, both a site of anticipation and a target of intervention, where vulnerability is both diagnosed and capitalized upon.

In the contemporary landscape, the hotspot designation has become a lever for global health investment. Initiatives such as the World Health Organization (WHO)

Research & Development (R&D) Blueprint,[1] the Coalition for Epidemic Preparedness Innovations (CEPI) (Penfold et al. 2023), and the Global Health Security Agenda (GHSA)[2] target such regions for rapid research deployment, infrastructure building, and innovation pilots. In doing so, these areas are transformed into conduits for scientific data, institutional visibility, and financial flows. Researchers and states alike strategically mobilize the hotspot label to gain inclusion in global preparedness architectures (Lakoff 2017, 71; Lessler et al. 2017). This dynamic exemplifies what V. Adams, Murphy, and Clarke (2009) describes as the economy of anticipation in global health, where speculative risks—such as the potential emergence of a new pandemic—are translated into actionable projects and funding streams. In this framework, disease hotspots in West Africa are not merely zones of vulnerability but also zones of potentiality, where crisis is capitalized upon and converted into knowledge, infrastructure, and influence.

The rise of (re)emerging infectious diseases such as Ebola and Lassa fever has only reinforced the hotspot image of West Africa, bringing renewed attention to the region's biomedical research capacities. In the case of Lassa fever, endemic areas remain largely confined to countries like Liberia, Sierra Leone, Guinea, and Nigeria (Fichet-Calvet and Rogers 2009; Gibb et al. 2017), reaffirming the need for robust, localized surveillance and control systems (Fig.5). Yet, the trajectory of Lassa fever research has been marked by a boom-and-bust cycle—periods of heightened global interest and intensive funding during or immediately after outbreaks, followed by long

[1] The R&D Blueprint is a global strategy and preparedness plan for rapid activation of R&D activities during epidemics; see https://www.who.int/observatories/global-observatory-on-health-research-and-development/analyses-and-syntheses/who-r-d-blueprint/background.

[2] The GHSA was launched in 2014 as an international partnership of sixty-five nations, international organizations, and NGOs; see https://www.usglc.org/coronavirus/global-health-security-backgrounder/.

intervals of neglect. This cyclical pattern is symptomatic of a broader reactive logic in global health, where research attention and resources are mobilized in periods of crisis but rarely sustained over time. I argue that this cyclical pattern of Lassa fever research has been shaped primarily by external geopolitical factors that make Lassa fever visible at times, invisible at others.

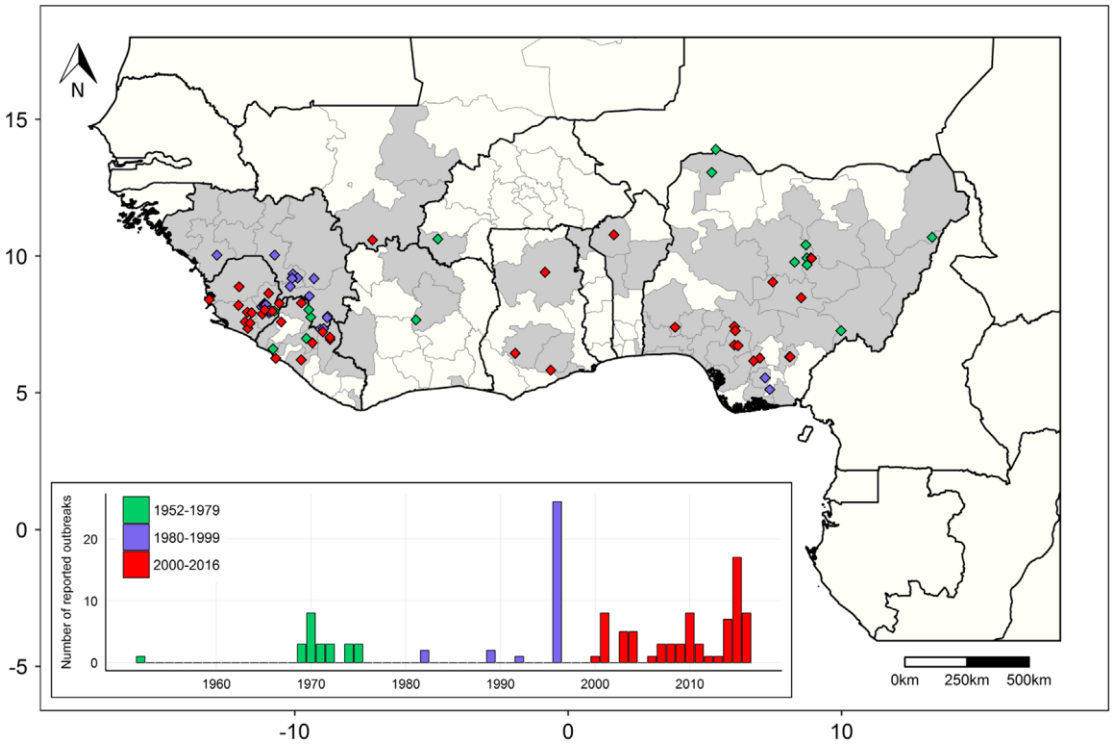

Figure 5: *The known distribution and reported history of Lassa fever and Lassa virus in West Africa (Extracted from Gibb et al., 2017).*

Building on this argument, this chapter draws on ethnographic fieldwork in Liberia, historical analysis, and anthropological theory to examine how West Africa—and Liberia in particular—has been transformed over time into a site of biomedical capital, where conditions of vulnerability are entangled with the promise of scientific potential. It argues that research initiatives in the region operate not merely as responses to public health needs but often resemble forms of extraction, akin to the exploitation of natural resources in so-called commodity frontiers (Moore 2000). In this framing, Lassa fever

research becomes a key node in the political economy of global health, linking local suffering to transnational flows of expertise, funding, and infrastructure.

1.2. Early Discoveries of Lassa Fever and the Initial Research Boom

In the 1950s, cases of high fever and convulsions of unknown origin were reported in the United States among the children of missionaries returning from Nigeria. Although diagnoses, including cerebral malaria, were suggested, researchers interested in arboviruses, such as Dr. John Frame (one of the pioneers of Lassa fever research), suspected a viral origin for the symptoms of this ill-defined illness (Frame 1992a). A decade passed before Frame was able to initiate a series of antibody tests of several specimens from missionaries and their children with medical histories of fevers and serious illnesses from Nigeria and other African countries. These tests were conducted by Dr. Jordi Casals, a physician-virologist at the Yale Arbovirus Research Unit (YARU),[3] a leading arbovirus research group at Yale university in the United States. The antibody specimens were tested for their reactivity to twenty-eight African arboviruses identified and stored at YARU, but the small sample size resulted in inconclusive tests, leaving determination of the illnesses' etiology unsolved (Frame 1992b).

The first identified outbreak of Lassa fever occurred in January 1969 when two missionary nurses died in Nigeria after showing the same symptomatology. The first nurse, Miss Laura Wine, was working in the locality of Lassa from where she was transferred to Jos for care, while the second, Miss Charlotte Shaw, was the nurse who cared for Miss Wine upon her admission to Jos hospital. Intrahospital contamination

[3] YARU was founded in 1964 and had the world's leading authorities on arbovirus infections among its members; see https://ysph.yale.edu/public-health-research-and-practice/department-research/epidemiology-of-microbial-diseases/research-themes/disease-areas/arboviruses/.

continued when a third nurse, Miss Lily Pinneo, after assisting in the autopsy of the second death, became ill in the following days, showing the same symptoms as her deceased colleagues (Frame 1992a). In January 1970, one year later, another hospital-based outbreak erupted in Jos, claiming the life of Dr. Jeanette Troup, the hospital's chief medical officer, who reportedly contracted the virus during an autopsy on a colleague (Frame 1992b). These clustered deaths among healthcare workers galvanized efforts to isolate and name the virus responsible for the then-unknown disease.

The discovery of Lassa fever occurred in the context of a broader virological surveillance initiative established by YARU in collaboration with missionary hospitals across Africa. This program prioritized the investigation of febrile illnesses in missionary patients with fevers of uncertain origin (Frame et al. 1970), based on a spatial imaginary that cast West Africa as a perpetual zone of pathogenic emergence. This framing was part of what anthropologist Andrew Lakoff has described as a "global health security regime" where certain geographies are designated as reservoirs of potential biothreats (Lakoff 2010). The subsequent decision to name the virus after Lassa, the town where the index case originated, exemplifies the practice of *toponymy*—naming diseases after places—an enduring convention in the taxonomy of infectious disease. Other notable examples include the Ebola virus (named after the Ebola River in what is now the Democratic Republic of Congo), the Zika virus (after the Zika Forest in Uganda), and the Nipah virus (from Sungai Nipah in Malaysia) (Taylor 2017). Historically, toponymic naming served practical purposes: facilitating epidemiological communication, associating pathogens with sites of identification, and aiding in early containment strategies.

Yet the naming of Lassa fever also illustrates the tensions and asymmetries embedded in this convention. Although the use of geographic names was consistent with arbovirological practice at the time, Dr. John Frame—who was central to the virus's identification—later reflected uneasily on the implications of this decision. He noted that while he had proposed the name following virological norms, he anticipated that the Nigerian health authorities would resent both the name and their exclusion from the naming process. According to Frame, he conveyed this information indirectly, asking Dr. Jeanette Troup to inform Nigerian officials, a move he later described as emblematic of "scientific imperialism" (Frame 1992a). His admission underscores how naming is never a neutral act; it is a form of epistemic authority with geopolitical implications.

As Frame feared, the reception of the name "Lassa fever" in Nigeria was fraught. Locals and national health authorities expressed dissatisfaction with the name, and the residents of Lassa town bore the brunt of the social stigma. Medical personnel became reluctant to be stationed there, patients' flows to the once-respected Lassa hospital declined, and the area experienced reputational damage that outlasted the initial outbreak. Even missionary physicians became hesitant to return (Mamadu 2018), perhaps haunted by the memory of their colleagues' deaths. This case, among others, contributed to growing awareness of the harmful consequences of toponymic naming. In response, the WHO has since issued guidelines discouraging the use of geographic locations in naming infectious diseases, citing concerns over stigmatization, economic harm, and the perpetuation of colonial dynamics in global health governance (Fukuda, Wang, and Vallat 2015; WHO 2015c).

The naming of Lassa fever thus encapsulates a broader dynamic in the history of global health: the power to define and label disease is deeply entangled with questions of spatial representation, authority, and memory. While ostensibly scientific, such acts of naming contribute to the symbolic construction of regions like West Africa as perpetual sources of contagion—a process that reflects what some scholars have termed the "spatialization of disease" (Kim and Chun 2022). The story of Lassa fever is not just about a virus; it is also about how the act of naming sedimented place-based stigma and reinforced hierarchies in the global production of biomedical knowledge.

The reach of Lassa fever quickly became apparent across West Africa, including in Liberia. The discovery of the virus sparked significant interest from international researchers and funding bodies eager to understand this new hemorrhagic fever. From 1970 to 1972, similar nosocomial outbreaks of Lassa fever were also recorded in Liberia and Sierra Leone, a long way west of Nigeria where the virus was first detected, indicating that the virus was present across parts of West Africa. The majority of recorded cases arose from people infected in the communities in these two countries. In Liberia, for instance, cases of unusual illnesses with Lassa fever–like symptoms were received at Zorzor Hospital in 1970. Two years later, after a pregnant woman showing Lassa fever symptoms was treated at the hospital, some patients and hospital staff members became ill and an outbreak of Lassa fever was suspected. Cases were limited to those patients who shared the same ward with the pregnant woman and the staff who attended to her. Both patients and healthcare workers—including Esther Bacon, an American missionary nurse and midwife—died (Frame 1992c).

This additional casualty among missionary healthcare workers underscored the ubiquity of missionary hospital networks throughout West Africa. From Nigeria to Liberia, Ghana, and Sierra Leone (to name a few), mission hospitals formed the backbone of the healthcare system in rural West Africa, highlighting the critical contribution of mission hospital networks to the history of the region's healthcare infrastructure. Christian missions established hospitals, dispensaries, and training schools in the region's remote areas and acted as early providers of Western-style medicine in remote areas underserved by colonial or postcolonial governments. They provided free or subsidized care to the poor, women, and children while conducting public health campaigns and providing access for epidemiologists and virologists to study disease ecology in situ. However, their work has not been without criticism, particularly regarding their role in suppressing Indigenous practices and prioritizing religious conversion over mere concern for the health and welfare of the local population (Adu-Gyamfi et al. 2020). In the case of Lassa fever, whose discovery remains closely associated with missionary healthcare workers, mission hospitals facilitated serological surveys on the disease and became key sites of surveillance, treatment, and knowledge exchange (Frame 1992c). In doing so, their early work not only made Lassa fever visible but laid the groundwork for future research across the region.

Following the aforementioned Lassa outbreaks and associated deaths among American missionary healthcare workers, subsequent research supported by the US Centers for Disease Control and Prevention (CDC) sought to identify the natural reservoir of the virus within the affected communities in Sierra Leone in 1972. These research efforts led to the identification of the multimammate rat—*Mastomys natalensis*—as the animal reservoir from which the virus spilled over to humans (Monath, Newhouse, et al.

1974), suggesting that the disease was zoonotic in origin (Fig6.B). Here, too, a zoonosis involving what Christos Lynteris (2022, 121) describes as “the best-known carriers of zoonotic diseases”—rats—had just been identified, underscoring the long history of these small animals being imagined as “epidemic villains” for their role in transmitting deadly diseases to humans, as in the case of the bubonic plague centuries ago. The concept of zoonosis—diseases that can be transmitted from animals to humans—has its historical roots in the scientific investigation of one of the deadliest pandemics in human history: the plague. Rodent studies during the third plague pandemic provided empirical evidence of disease spillover from animals to humans (Christos Lynteris 2024), and shaped the foundational principles of zoonosis (specifically, transmission dynamics, reservoir management, host susceptibility, and ecological factors) (Teshome and Addis 2019). Understanding these principles has been critical to advancing knowledge of Lassa fever and other zoonotic diseases. Indeed, it is estimated that zoonotic viruses represent the majority of human pathogens (Woolhouse and Gaunt 2007), and that these pathogens almost always thrive at human-animal-environment interfaces where human practices enable close contact with animal hosts (Kreuder Johnson et al. 2015).

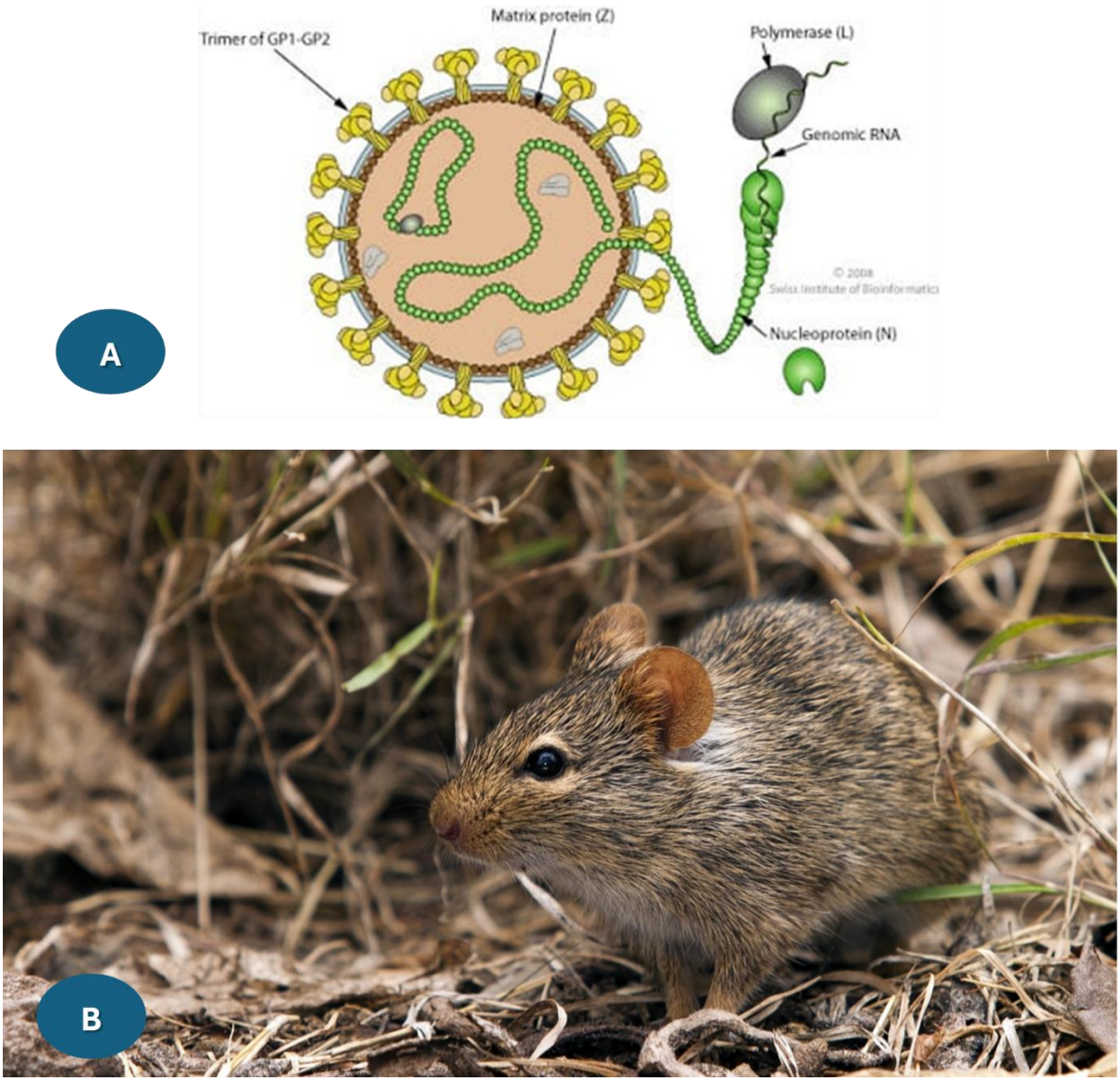

Figure 6: *A). Structure of Lassa virus (Extracted from Aryal 2025). B). Mastomys natalensis, the primary animal reservoir of the virus (Extracted from CDC 2025).*

The sequence of events related to Lassa fever indicates that a key trigger for early research into the disease was the abovementioned deaths of the US missionary health workers in Nigeria and Liberia, which brought international attention to the disease and led to an urgent response from the CDC and other research institutions (Frame 1992b). The tragedy highlighted the potential severity of the virus and the risk it posed beyond the local communities where it was endemic. Further amplifying the urgency of Lassa fever

research was a laboratory accident in the United States, where the virus inadvertently leaked, resulting in the infection of two laboratory staff (one of whom died) at the Yale Arbovirus Research Unit (YARU) during the sample processing for the agent's detection (Frame 1992b). This incident highlighted the dangers associated with handling the pathogen and prompted greater investment in studying its transmission, pathology, and containment measures.

The abovementioned high-profile events demonstrate how Lassa fever only gained visibility when it affected individuals outside of the impoverished communities in rural areas where it was endemic. As Paul Farmer has observed, diseases of the poor often remain invisible until they manage to, in Farmer's words, "spillover into the more affluent populations where the death of people might be considered more important" (Farmer 1996). The trajectory of Lassa fever research illustrates this pattern: while the virus had likely been causing illness and death in West African communities for centuries, it was only after it reached Western healthcare workers and scientists that it attracted sustained international attention and funding and therefore became known as a "new" or "emerging" infectious disease.

The question of whether the disease was new when it was first detected in Nigeria in 1969, following the death of American missionary nurses, remained relevant. It prompted anthropologist Annie Wilkinson to interrogate whether the disease was "really new" or whether it was "only being recognized for the first time" (Wilkinson 2017). Similarly, Gire and colleagues argue that "some viral infections may not represent emerging diseases, but improved detection and diagnosis of common diseases" (Gire et al. 2012). Relating this question to the way the Lassa virus was first detected in Nigeria,

one might wonder how Miss Laura Wine, the first American missionary nurse, was infected. If she was infected by patients to whom she provided care, where were those patients living at the time, how did they become infected, and how many deaths would have occurred in their community with the same symptoms before the patients finally decided not to go to traditional healers, but rather to go to a Western mission hospital in Lassa town? These questions seem to have remained unanswered due to a lack of diagnostic resources and techniques at the time. This observation seems even more pertinent today, since phylogenetic analyses have suggested that Lassa virus may have been circulating in West Africa for hundreds of years (Andersen et al. 2015). Also, analyses of evolutionary histories have indicated that the virus might have diverged around five hundred years ago from other arenaviruses (Ehichioya et al. 2011), indicating that Lassa fever, rather than being an emerging infection, has persisted as a hidden disease within impoverished rural communities in West Africa, where sporadic cases continue to occur.

Additionally, the virulence of Lassa virus, coupled with its ability to rapidly spread within populations and cause major illness and death, made it a potential bioweapon (Borio et al. 2002). During the Cold War, Lassa fever research, along with that into other hemorrhagic fever diseases such as Ebola and Marburg, was entangled in the geopolitical rivalry between the United States and the Soviet Union; the disease attracted major interest among American and Soviet researchers, and evidence of intensive work toward weaponizing the virus in the 1980s has been reported (Tucker 1999). As the virus took on a biosecurity dimension among superpowers due to the threat of terrorism, the CDC classified Lassa virus as a “category A” pathogen in 1999, placing it in the highest ranking of risk for potential bioweapons (CDC 2012; NIAID 2012; Borio et al. 2002). This

context influenced funding decisions, research priorities, and international collaboration, adding another layer of complexity to West Africa's role in Lassa fever research.

In this early boom period of Lassa fever research, American institutions present in Liberia played a pivotal role in supporting research activities on the deadly virus and other tropical diseases. Among them, the Firestone Tire & Rubber Company—established in Liberia in the 1920s as a capitalist venture by Harvey Firestone—was particularly influential (see Mitman 2021). Originally driven by the imperative to safeguard the health of its workforce and thereby ensure uninterrupted rubber extraction, Firestone allocated $250,000 in 1946 to help establish an institute for research in tropical medicine. This initiative culminated in the opening of the Liberian Institute of the American Foundation for Tropical Medicine in 1952 (Mitman 2021, 205).

Functioning as what Gregg Mitman, in his book *Empire of Rubber: Firestone's Scramble for Land and Power in Liberia*, has termed "an enclave of white scientists," the institute became a node in transnational biomedical experimentation. Predominantly staffed by researchers from US universities, the institute utilized both human subjects (Liberian workers employed on Firestone's plantations and their family members) and nonhuman primates (particularly chimpanzees native to the surrounding rainforest) as test subjects (Mitman 2021, 205). In this sense, the Firestone concession became a site of dual extraction: the economic extraction of rubber from the land and labor of Liberia, and the epistemic extraction of biomedical knowledge from the bodies and blood of those very laborers. Crucially, this latter form of scientific exploitation often went unrecognized by those subjected to it. Mitman (2021) frames this dynamic as suggestive

of “racist science” (205), where racial hierarchies structured access to health, knowledge, and care.

These extractive research practices persisted until 1970, when the institute closed following the withdrawal of support from the American Foundation for Tropical Medicine and a broader funding crisis. In 1971, the Liberian government took over the vacated facility and reestablished it as the Liberian Institute for Biomedical Research (LIBR) (Mitman 2021, 290)—a transformation that marked both a reclaiming of scientific infrastructure and a continuation of transnational research agendas. This institutional shift illustrates how countries like Liberia inherited and repurposed biomedical infrastructures originally shaped by foreign interests, adapting them to national health priorities while remaining entangled in global networks of research, expertise, and capital. Though now under national auspices, the institute’s foundation remains embedded in a legacy of externally driven biomedical inquiry. In an interview with the first director of the newly established LIBR, Firestone’s role in the institute’s revival was underscored. He recalled that the company, concerned “that tropical diseases might compromise their productivity,” provided initial funding to support the reactivation of the institute. This involvement was consistent with Firestone’s broader approach to managing labor health risks, including the establishment of hospitals on its plantations to provide free medical care to its workers (Mitman 2024a, 2021).

Following the detection of Lassa fever in Liberia during the 1970s, Firestone intensified its engagement in disease research. Alarmed by the potential threat to its operations, the company responded to requests for support by contributing $4,000 of the $5,000 needed for crucial serological investigations, which ultimately confirmed the

virus's presence in six additional countries across West and Central Africa between 1972 and 1978 (Frame 1992c). Beyond financial assistance, Firestone further enabled Lassa research by granting access to its workforce and facilities—providing both human research subjects (workers and their families) and infrastructure (its plantation hospitals) for sample collection and management (Frame 1993).

American missionary hospitals continued to play a critical role in these early investigations, serving as key sites for patient care, data collection, and case studies. Institutions such as Phebe Hospital in Bong County, and Curran Memorial Hospital in Lofa County provided critical infrastructure for detecting and treating Lassa fever cases (Frame 1992c). As noted earlier, missionary health networks have been the primary providers of healthcare in rural areas throughout West Africa (Adu-Gyamfi et al. 2020). In Liberia, the establishment of medical missionaries dates back to the 1900s. The country's first mission-funded hospital and nursing school, the Phebe Hospital and School of Nursing, funded by the American Lutheran Church, opened in 1921 in Muhlenberg, near Monrovia[4]. In 1924, Lutheran missionaries, determined to bring health services closer to the Indigenous people of the interior, established a health facility in Zorzor (Lofa County), which later became the Curran Memorial Hospital in 1944 and temporarily housed the services of Muhlenberg's Phebe Hospital after its closure a year later. This was followed in 1965 by the construction and opening of what was then a groundbreaking facility—Phebe Hospital—in rural Suakoko District (Bong County), made possible by funding from the churches (Lutheran, Protestant Episcopal, and United

[4] Archival Document found in Phebe Hospital's library.

Methodist) in America and a modest financial contribution and land lease from the Liberian government (Miller 2011; Phebe Hospital n.d).

The pivotal role of Curran Memorial Hospital and Phebe Hospital in the management of Lassa fever was underscored during my fieldwork at Phebe Hospital. One of my informants, a nurse who survived Lassa fever in 1994 while working there, still remembers the involvement of mission hospitals in fighting the deadly virus. He explains that "convalescent plasma treatment was only done by missionary doctors in these two [Phebe and Curran Memorial] hospitals." Other informants reported that their relatives survived Lassa fever thanks to the convalescent plasma treatment at Phebe Hospital in the 1980s and 1990s. These hospitals, often among the few well-equipped health centers in rural areas, facilitated the documentation of clinical manifestations and patient outcomes in remote areas where Lassa fever was much more prevalent, providing an essential basis for research activities.

1.3. The Bust: Civil War and Research Decline

Despite the promising early research efforts, the protracted civil wars in Liberia and Sierra Leone (1989–2003) led to the collapse of scientific infrastructure, bringing an end to Lassa fever research in these countries. The turmoil resulted in the destruction of research facilities, the withdrawal and displacement of international researchers, and the loss of valuable epidemiological data (Leach and Barry 2010, 56; Wilkinson 2015). As a result, Liberia's contributions to Lassa fever research were significantly curtailed during this period.

The outbreaks of war in Liberia, and then in Sierra Leone—where the CDC had previously set up research stations in Segbwema (at the border with Liberia), Kenema,

and Panguma, with the main treatment program based in Segbwema at the Nixon Memorial Mission Hospital—hampered research activities in these countries. Initially, the war prompted the CDC to move their research activities to the Kenema Government Hospital, before closing the entire program in 1993 as the war scaled up (Wilkinson 2015). Given the proximity of Guinea to Sierra Leone, coupled with its similar ecozone characteristics (Sogoba, Feldmann, and Safronetz 2012) and the reported high Lassa seroprevalence in the Guinean forest region (Lukashevich, Clegg, and Sidibe 1993), the CDC decided to move their research activities to Guinea (Wilkinson 2015), where they later founded the International Center for Research on Tropical Infections (Centre International de Recherche sur les Infections Tropicales, or CIRIT) at N'Zerekore regional hospital in 1999 (Roth's fieldnotes, unpublished data). Due to the lower incidence of Lassa fever in Guinea, the CDC's research interest quickly waned in the country, and this resulted in the closing of their program in 2003 (Wilkinson 2015).

The lack of sustained research during the war years meant that Lassa fever remained an endemic and a deadly threat in Liberia with limited surveillance or control measures in place. As Melissa Leach and Barry Hewlett observed, Lassa fever failed "to fit well the increasingly established outbreak-event model" that characterized other viral hemorrhagic fevers, such as Ebola. Consequently, Lassa fever received less and less attention from the WHO and other agencies (Leach and Barry 2010, 56). Given its potential to cause major public health problems in West Africa, Lassa fever was therefore depicted as an "unheralded problem" in the region and the "poster child of neglected diseases" (see Wilkinson 2015). This phase exemplified the vulnerability of scientific progress in the region to political instability and shifting global priorities.

Throughout this period, Lassa fever remained heavily clustered in often hard-to-reach rural areas, far from national capitals where policymakers and global health decision-makers were typically based. In Liberia, for instance, many of the most affected communities—particularly in Bong and Lofa Counties—are situated hundreds of kilometers from Monrovia, the seat of governmental and public health infrastructure. During my fieldwork in Bong County, residents of the Phebe Airstrip Community, Rubber Factory Community, and Suakoko referred to their localities as the "Lassa belt" of the county. This designation, they argued, stemmed from the disproportionate number of Lassa fever cases reported in their villages relative to other parts of the region. A similar spatial discourse was observed in Sierra Leone, where the eastern region—especially along what is commonly referred to as the "Kenema-Kailahun axis" or the "axis of Kenema and Segbwema"—was widely acknowledged as the "Lassa belt" (Wilkinson 2015). These rural zones not only suffered from underreporting but also from chronically limited healthcare provision, largely as a consequence of their geographical isolation.

1.3.1. "Lassa Belt": Vernacular Risk Category or Borrowed Biomedical Geography?

The emergence and increasing use of the term "belt" to describe clusters of Lassa fever transmission within endemic areas illustrates a dynamic interplay between vernacular epidemiology and borrowed biomedical discourse. In countries such as Liberia and Sierra Leone, residents and local health workers have adopted the term to articulate heightened disease vulnerability in particular localities (Thomas et al. 2024; Sandige 2018; Rohan 2022; Wilkinson 2015). In these contexts, the "belt" has become a locally meaningful spatial idiom, used to explain why certain localities such as Phebe Airstrip Community, Rubber Factory Community, Suakoko, and Kenema, are perceived

as persistent epicenters of Lassa fever outbreaks. However, there is every reason to believe that this terminology is not entirely indigenous. Rather, it appears to have been influenced by biomedical actors, including national health officials, international researchers, and NGO practitioners, who have drawn implicit or explicit analogies to the more widely institutionalized "meningitis belt" model in Africa.

In public health, the term "belt" refers to a spatially delineated region characterized by a persistently high incidence or prevalence of a specific disease. These belts emerge due to a convergence of environmental, climatic, socioeconomic, and biological factors. The metaphor of a belt conveys a sense of continuity across a defined space, often spanning multiple districts or national boundaries. The concept was first institutionalized by Léon Lapeyssonnie in 1963 through his work on the "African meningitis belt," a vast zone stretching from Senegal to Ethiopia (Lapeyssonnie and OMS 1963), where seasonal meningococcal epidemics were shown to follow a predictable geographic and climatic pattern. While this spatial designation has been particularly influential in epidemiology and public health planning in terms of strategic and long-term interventions to control meningitis in Africa, the term contributed to what anthropologist Oumy Thiongane termed "the construction of a guilty ecological space" through which meningitis came to be considered an epidemiological problem specific to Africa (Thiongane 2013, 71). This formulation had significant policy implications: the continental scale, seasonal regularity, and shared ecological conditions of the meningitis belt triggered coordinated, multicountry interventions, including the development and deployment of region-wide vaccination campaigns.

In stark contrast, the Lassa fever belts in endemic countries such as Liberia and Sierra Leone are far smaller in scale, spatially fragmented, and embedded in rural enclaves with limited infrastructure and weak health surveillance. They lack the epidemiological regularity that characterized the meningitis belt, making them less visible as strategic spaces of intervention, thus less politically actionable on the international stage. The ecological specificity of Lassa virus transmission—driven by rodent reservoirs (*Mastomys natalensis*), human exposure patterns, and local socioeconomic conditions—further complicates efforts to construct a unified belt model akin to that of meningitis. Furthermore, the WHO has not formally adopted the "Lassa belt" terminology. Unlike the meningitis belt, which is explicitly defined in WHO mapping and planning, Lassa fever continues to be addressed through the more diffuse language of "endemic regions" or "Lassa-prone countries." This terminological and conceptual gap reflects and reinforces the disease's marginal position in global health priorities. As such, the "Lassa belt" exists more as a vernacularized expression of localized vulnerability than a globally recognized tool of strategic intervention.

As a result, while the concept of a belt helped consolidate international attention and funding around meningitis control, in the case of Lassa fever, it has done little to mobilize equivalent action. Instead, the "Lassa belt" operates as a local spatial idiom of suffering—a term that reflects the experiential geography of disease as understood by those who live within it. In places like Bong County in Liberia or Kenema in Sierra Leone, residents and frontline healthcare workers invoke the "belt" not as a formal epidemiological construct, but as a way to make sense of their recurrent exposure to risk, the geographic clustering of illness, and the persistent lack of institutional response. This bottom-up articulation serves to situate Lassa fever within everyday landscapes of

vulnerability, where disease is entangled with poverty, infrastructural neglect, and distrust of health systems (Kamara, Fatoma, and Moseray 2024; Akindokun, Adeleye, and Olorunlowu 2024). Yet despite its resonance in local narratives and its recognition in some academic literature (Thomas et al. 2024; Rohan 2022; Sandige 2018; Wilkinson 2015), the term fails to generate robust structural responses or sustained policy attention and programmatic coherence observed in more formalized disease geographies.

The contrast with the "meningitis belt" is instructive. This designation, constructed through decades of WHO-mandated research and institutional codification, succeeded not only in mapping risk but in mobilizing international resources, justifying regional vaccination campaigns, and galvanizing public health planning on a continental scale. It became a strategic imaginary in global health—an organizing principle around which actors could align interventions, funding streams, and research agendas. The Lassa belt, by contrast, remains epidemiologically fragmented, politically underdefined, and spatially disjointed and peripheral. It does not command the same visibility in global health governance, nor does it serve as an actionable unit within national or transnational health strategies.

Thus, while both meningitis and Lassa fever have been geographically framed through the lens of "belts," the scale, continuity, and visibility of these disease geographies—and the political imaginaries they generate—differ profoundly. The meningitis belt represents a high-resolution epidemiological space, visible to policymakers and funders; the Lassa belt, by contrast, occupies a low-resolution, marginal space, where the articulation of local suffering has yet to produce meaningful institutional response. In this divergence lies a deeper commentary on how spatial

metaphors in global health are not neutral descriptors but productive framings that either invite action or compound neglect, depending on their institutional uptake and alignment with global health priorities.

1.3.2. Fragmented Belts in an Endemic Region

As shown above, the term "Lassa belt" has increasingly emerged as a form of vernacular epidemiology, used by residents in affected communities to describe and make sense of their lived experience of the disease. This locally generated spatial idiom often supersedes formal epidemiological classifications, such as "Lassa endemic region," by offering a more immediate, place-based articulation of risk. At Phebe Hospital, I observed that the term "belt" surfaced repeatedly in conversations with healthcare workers when referring to the three most affected villages: Phebe Airstrip Community, Rubber Factory Community, and Suakoko Village. These localities, while epidemiologically linked, are geographically dispersed—with Phebe Airstrip and Suakoko approximately five kilometers apart, and Rubber Factory located further away still. Their spatial arrangement reveals not a continuous stretch of disease incidence but rather what I refer to here as "fragmented belts": localized clusters of high transmission embedded within a broader endemic zone—Bong County.

While the terms "Lassa belt" and "Lassa endemic region" are often used interchangeably in both public health discourse and scholarly literature, they in fact invoke distinct spatial scales and logics. A "Lassa endemic region" typically denotes a broad geographic area—spanning multiple countries in West Africa—where Lassa virus is consistently present, and where sporadic outbreaks recur over time (Fichet-Calvet and Rogers 2009; Richmond and Baglole 2003). Such regions include Liberia, Sierra Leone,

Guinea, Nigeria, and other neighboring countries sharing the same ecozone (Sogoba, Feldmann, and Safronetz 2012).

In contrast, the term “Lassa belt” functions as a more localized spatial descriptor, referring to specific zones within these endemic countries where transmission intensity is particularly acute and often persistently clustered. Locating a Lassa belt within a Lassa endemic region suggests a nested spatial relationship, wherein the belt represents a core zone of heightened vulnerability within a larger and more diffuse field of endemicity. Yet, unlike the relatively continuous contours that often define endemic zones, Lassa belts are fragmented and discontinuous, shaped by microecological variables such as rodent-human interactions, housing density (E. Fichet-Calvet 2014; Bonwitt et al. 2017; Douno et al. 2021), and mobility patterns (Merrill et al. 2021), as well as unequal access to healthcare infrastructure (Besson, Pépin, and Metral 2024).

This geographic discontinuity complicates their legibility as coherent epidemiological spaces and diminishes their visibility in policy frameworks that favor broader regional planning. While endemic regions tend to invite generalized surveillance and preparedness, the belts demand highly localized, community-level interventions that often fall outside the scope of national health strategies or international funding priorities. As such, the “Lassa belt” functions not only as an epidemiological indicator, but also as a socio-spatial marker of concentrated neglect, pointing to pockets of chronic underinvestment and infrastructural marginalization within the larger geography of Lassa fever persistence.

1.3.3. Lassa Fever: An Overshadowed Threat

Throughout the "bust" period of research on Lassa fever, the disease remained geographically confined to impoverished rural communities in endemic regions in Nigeria, Guinea, Sierra Leone, and Liberia, with a tendency to extend into other neighboring countries with similar ecological characteristics (Sogoba, Feldmann, and Safronetz 2012). Indeed, Lassa fever's association with isolated, rural, and neglected regions led to its consideration by researchers as a Neglected Tropical Disease (NTD) (Wilkinson 2015), although it has not been officially classified in this category by the WHO (Lassa fever was only listed as a priority disease for research and development during the 2018 WHO R&D Blueprint review) (Mehand et al. 2018). The concept of NTDs, rooted in 1970s efforts to reorient international organizations toward developing new strategies for improving health and economic development, was, in Webel's words, "an operative category in global health, as a cluster of infectious diseases targeted for particular actions to gradually reduce their prevalence globally" (Webel 2022). The concept gained momentum in the early 2000s as part of a global health effort to draw attention to diseases affecting impoverished populations, primarily in tropical regions, which had long been underprioritized in global health funding and research agendas (Smith and Taylor 2016; Webel 2022).

Therefore, considering Lassa fever as an NTD appeared to be a way of raising the flag to draw the attention of the international community and funding agencies to an infection that, while dangerous, had been overlooked. This strategy was in line with the advocacy goals raised around NTDs in the 2000s to ensure that they were included in global health priorities for finding solutions to respond to and control outbreaks.

However, this strategy did not seem to resonate at the time, as Lassa fever remained dormant in vulnerable remote communities and did not receive sustained funding or attention. This status quo may be attributable to the fact that Lassa fever was not officially listed as a WHO NTD (see Webel 2022), or to the limited pharmaceutical market incentives for vaccine and drug development due to the low economic return potential of the disease (Besson, Pépin, and Metral 2024), or to the political instability of parts of the endemic regions (the Mano River subregion), or to a combination of all of these factors.

Instead, Lassa fever was overshadowed by other high-profile infections such as malaria, HIV/AIDS, and tuberculosis (TB), which, along with other infectious diseases, became the focus of the UN's Sixth Millenium Development Goal (MDG6) in September 2000 (MDG n.d). This major event, motivated by the combined toll of the three infections, put them in the spotlight and spurred targeted, large-scale international funding and intervention efforts. Major initiatives to guide funding streams followed: the Global Fund to Fight AIDS, TB and Malaria (GFATM), special presidential initiatives—the President's Emergency Plan for AIDS Relief (PEPFAR) and the President's Malaria Initiative (PMI)—the World Bank's malaria booster program, the WHO's Roll Back Malaria partnership and Global Malaria Program, and the Bill and Melinda Gates Foundation; all of which have focused on health issues related to AIDS, TB, and malaria (D.H. Molyneux 2008; Hanefeld 2011). Together, the three infections became the siren call that would attract all the donors; they later formed what became known as the "Big Three" diseases and absorbed the lion's share of global health funding (Morales 2005; D.H. Molyneux 2008). As a concrete example, from its inception in 2002 to the end of 2009, the Global Fund alone

had disbursed about $10 billion[5] for HIV/AIDS, TB, and malaria control efforts (Global 2010), while other infections, including Lassa fever, continued to be overlooked.

While these global efforts have contributed significantly to reducing the burden of the "Big Three" diseases, the overemphasis on specific diseases has only reinforced the cycle of underinvestment and neglect, leaving gaps in surveillance systems and hindering the development of vaccines or treatments for Lassa fever. In addition, the overlap of Lassa fever symptoms with those of more familiar diseases such as malaria has further complicated diagnosis and response efforts in West African countries where both diseases are endemic amid an overemphasis on the latter. This striking reality suggests that Lassa fever may have continued to silently cause suffering in vulnerable communities where misdiagnosis as malaria could be prominent. The situation for Lassa fever remained as such until major events occurred—both locally and internationally—before a renewed research interest arose, which I discuss in the next section.

1.4. Postwar Revival and a New Boom

The new boom in Lassa fever research in Liberia emerged gradually after the end of the civil war, as efforts to rebuild the country's health and research infrastructure began in earnest. Emerging from the rubble of conflicts, Liberia's fragile postwar state faced enormous challenges—ranging from collapsed public health systems to widespread poverty and a decimated professional workforce. In this context, the revival of Lassa fever research was neither linear nor immediate. Rather, it was shaped by a complex interplay of national recovery efforts, regional health dynamics, and the

[5] All currency amounts are in US dollars unless otherwise specified.

cascading effects of global health priority agendas. With everything appearing as an urgent priority—maternal health, malaria, basic sanitation—the renewed attention to Lassa fever in Liberia depended heavily on the alignment of local needs with the interests of international donors and research institutions. This resurgence did not unfold uniformly but instead took shape through a series of local and international events and interventions, which I will discuss in the chronological order in which they occurred.

1.4.1. International Biosecurity Concerns and Lassa Research Revival

The first major event to impact Lassa fever research occurred in the United States—thousands of miles from the Lassa-endemic areas of West Africa—at a time when the disease was begging for the attention of international funding agencies. This event, while unfortunate, was a blessing in disguise for the revival of research on Lassa fever, which had long continued to silently claim victims in rural West Africa. Indeed, in the immediate aftermath of September 11, 2001, the United States was the target of anthrax attacks that were thought to be an act of bioterrorism (McCarthy 2001), triggering heightened global concern about biosecurity and pathogens deemed to harbor bioweapon potential, including hemorrhagic fever viruses such as the Lassa virus. In the wake of these attacks, biodefense became a policy preoccupation for the US government, and this ultimately resulted in redirecting resources toward diseases deemed potential bioterror threats, including Lassa fever (Borio et al. 2002; Vogel 2008). Thus, between 2001 and 2005, US government spending on civilian biodefense increased exponentially from $294.8 million to $7.6 billion (Lakoff and Collier 2008, 10), and the reallocation of these funds led to renewed interest in strengthening hemorrhagic fever research capacity in West Africa.

As a result, Lassa virus garnered renewed interest among policymakers and scientists in the US, leading to a significant influx of US "biodefense dollars" into Sierra Leone for the development of "diagnostics for biodefense" at the Kenema Government Hospital. As Annie Wilkinson notes, "this unlikely configuration of geopolitical interests transformed Lassa from a neglected disease to a priority" (Wilkinson 2017), leading to concerted efforts to better understand and control the disease. Although there was no evidence of biodefence funding targeting Liberia in the wake of the 2001 US anthrax attacks, research initiatives supported by this funding in Sierra Leone had an indirect impact on Liberia through regional collaboration and infrastructure development for Lassa fever case management. As recently as 2023–2024, during my fieldwork at Phebe Hospital in Liberia, both health workers and community members recalled that samples from suspected Lassa patients were sent to Kenema for testing because there were no testing facilities in the country at the time.

This revival of Lassa research under the banner of biodefense also reflects broader trends in how global health priorities are shaped by national security agendas. As Collier and Lakoff (2008) have argued, the framing of disease threats through a security lens (i.e., biosecurity logics) often leads to selective investments based less on disease burden than on perceived risks to powerful states. The case of Lassa fever exemplifies this dynamic: although endemic in West Africa for decades, it only gained traction among US funders once it became entangled with anxieties about future pandemics and biological weapons. This securitized rationale helped justify investments in high-containment laboratories, rapid diagnostic technologies, and disease surveillance systems in places such as Kenema Government Hospital, which in turn reshaped the landscape of Lassa research. Yet, this also raises questions about

sustainability and equity, since interventions driven by foreign security priorities are not always aligned with the health needs and infrastructural realities of the communities most affected by the disease.

1.4.2. Lassa Insisted, Ebola Surprised: The Spate of Viral Hemorrhagic Fevers

In 2004, during a period of relative silence about Lassa fever in Liberia—with cases probably going unreported due to a lack of diagnostic tools to detect them, as was the case in neighboring Sierra Leone at the time—a spate of Lassa fever cases was reported in a pediatric ward at the KGH in Sierra Leone. The epidemic, marked by the death of the renowned Lassa specialist Dr. Aniru Conteh, as well as some expatriates and UN peacekeepers, brought additional international attention to the disease. These devastating losses dealt a severe blow to peacekeeping efforts and post-conflict development initiatives aimed at rebuilding the country. The alarming situation prompted international donors to bring together regional stakeholders in order to establish the Mano River Union Lassa Fever Network (MRU-LFN). The ultimate goal of this network was to enhance and coordinate Lassa fever research across the region. One notable advance was the availability of routine diagnostic tools for suspected Lassa patients at KGH from 2007 (Wilkinson 2015). However, due to its heavy reliance on external funding, the network has struggled to achieve its disease surveillance and control objectives.

Similarly, CDC collaborations in Liberia began in 2007, with the formal establishment of an office in 2015 in Monrovia. Although the focus of these collaborations was not exclusively on Lassa fever—as was the case in neighboring Sierra Leone with the US biodefense funding in Kenema—these efforts focused on building laboratory capacity, strengthening the surveillance system, and improving outbreak

response capabilities in a country whose health system still bore the scars of more than a decade of civil war (CDC 2024). Although not explicitly labeled as biodefense, these programs were consistent with global health security goals influenced by post-2001 US biodefense priorities and indirectly benefited Liberia through shared knowledge and cross-border disease surveillance. Liberia also benefited from support from the Bernhard Nocht Institute for Tropical Medicine (BNITM) for laboratory diagnosis of Lassa fever cases in 2007. As the country lacked testing facilities, more than 180 samples from suspected Lassa patients were sent to the German research institute for diagnosis. (Panning et al. 2010).

Most notable was the 2014–2015 Ebola outbreak in West Africa, which served as a significant catalyst for renewed interest in research on hemorrhagic fever diseases, including Lassa fever in the most affected countries of Guinea, Liberia, and Sierra Leone. This unprecedented health crisis exposed the weaknesses of the health systems in a region already weakened by decades of sociopolitical unrest and a lack of consistent funding in the health sector (Alexander et al. 2015; Heymann et al. 2015). As these countries were unprepared for an epidemic on the scale of the Ebola virus outbreak, the crisis triggered a global effort and the mobilization of international health and government agencies to propose a rapid response to this major public health event. Drawing on Leach and Hewlett (2010)'s accounts of hemorrhagic fevers' narratives, one could infer that the international community's rapid response to the Ebola outbreak was because Viral Hemorrhagic Fevers (VHFs)—and Ebola in particular—were perceived as a global threat emerging out of Africa and a deadly local disease event that required the mobilization of rapid containment and public health measures. As a result, the dramatic fear generated by hemorrhagic fever diseases motivated national and international

organizations to develop policies and strategies to prepare for and respond to hemorrhagic fever and other outbreaks.

To this end, international organizations, including the WHO, the CDC, and the US National Institutes of Health (NIH), invested substantial resources to strengthen West Africa's capacity to control viral hemorrhagic fevers and respond to outbreaks. For example, in 2016, the US Defense Threat Reduction Agency and the Strategic Command Center for Combating Weapons of Mass Destruction (DTRA/SCC-WMD) signed a $35 million contract with CH2M, a US-based engineering firm, to expand and improve national and local biosafety, biosecurity, and biosurveillance capabilities in Liberia, Sierra Leone, Guinea, and Senegal (R. Adams 2016). The CH2M teams were tasked with providing design, engineering, construction, and infrastructure services, as well as scientific expertise through staff training at new and existing laboratory facilities in the region (Biodefense 2016). While the immediate priority was to contain Ebola, these efforts also improved laboratory facilities, disease surveillance, and research collaborations that ultimately benefited Lassa fever studies in the region. As a result, several new programs emerged to address the persistent burden of Lassa fever in West Africa. An important one was the largest epidemiological study to date funded by the Coalition for Epidemic Preparedness Innovations (CEPI) as part of its global Lassa fever research initiative, the Enable program, which aimed to assess the true burden of the disease and improve diagnosis and treatment in five endemic countries in West Africa (Penfold et al. 2023; CEPI 2020). For this research program, CEPI has invested about $10 million in Benin, Guinea, Nigeria, Liberia and Sierra Leone, where more than 23,000 participants have been recruited and followed for twenty-four months to determine the incidence of the disease in the subregion (CEPI 2020).

In Liberia, the study was conducted in three rural communities in Bong County, a region known to be highly endemic to Lassa fever (Jetoh et al. 2022; Dwalu, Tweya, et al. 2024), with Phebe Hospital (a referral hospital in Suakoko District) serving as the study site for case management and sample testing. Research activities began in 2020 at Phebe Hospital (the study site) and were coordinated by the implementing partner—a U.S. partner university[6] in collaboration with the National Public Health Institute of Liberia (NPHIL) (CEPI 2022b; UNC 2019), whose role was to ensure that research was aligned with national health priorities and to support disease surveillance and public health interventions. As of 2024, when I completed my fieldwork at Phebe Hospital and in the study villages, research activities were underway and a subproposal to continue the study was being developed as researchers set new goals. My recent phone conversation with people on the ground informed me that enrollment for the extended study, called Enable 1.5, had begun in January 2025.

Regarding Lassa fever vaccine initiatives, CEPI also supported the International AIDS Vaccine Initiative (IAVI)'s novel vaccine candidate against Lassa virus in a Phase 1 clinical trial in Monrovia in 2022 (IAVI 2022). With the continued financial support of CEPI, the International Vaccine Institute (IVI) has been leading the ARC-WA (Advancing Research Capacity in West Africa) consortium since 2023. This consortium brings together partners in West Africa to prepare sites for Phase 2b and 3 clinical trials of a Lassa fever vaccine that are compliant with Good Clinical Practice (GCP). Phebe Hospital in Liberia is one of these sites (IVI n.d). These endeavors further diversified funding sources and strengthened the scientific infrastructure needed to tackle Lassa outbreaks.

[6] A pseudonym is used here and throughout to protect the identity of the institution.

Another important initiative, a project funded by the US Agency for International Development (USAID) titled "Strategies to Prevent Spillover (Stop Spillover)," began work in Liberia to build the country's capacity to identify high-risk interfaces and control zoonotic diseases at their source. Lassa virus was a priority pathogen for this project, which sought to determine the true distribution of the virus and its reservoir hosts across the country, using community-based research and environmental surveillance strategies. By engaging local communities and health authorities, Stop Spillover has emphasized community-driven interventions to prevent spillover events and strengthen surveillance systems in Liberia (STOP 2024a, 2024b). However, funding for this initiative may have come to a halt under Trump's dismantling of USAID, paving the way for another potential Lassa fever research bust in the region.

Together, these events formed the backbone of a postwar revival in Lassa fever research. From the heightened biodefense interests sparked by the 2001 anthrax attacks to the collaborative networks and consortia established afterward, and culminating with the far-reaching impacts of the Ebola outbreak and subsequent global initiatives, Liberia and the broader West African region witnessed a renewed commitment to studying and controlling Lassa fever. Although challenges for sustainability remain, this resurgence of scientific investment has opened new avenues for vaccine development, diagnostics, and treatment, promising improved public health outcomes for affected communities.

1.4.3. Lassa Fever: A Biomedical Capital

The postwar revival of Lassa fever research in Liberia, catalyzed by global biosecurity concerns and intensified by the 2014–2016 Ebola outbreak, opened new possibilities for international collaboration, diagnostic development, and clinical

research. However, this renewed attention was never solely a function of local public health need or disease burden. Instead, it is increasingly clear that Lassa fever has acquired value within the circuits of global health as a form of biomedical capital—a disease that, much like a natural resource, can be mined, extracted, and invested in under the right political-economic conditions. Drawing on the commodity frontiers literature—which critiques how landscapes are transformed into zones of extraction under the logics of capitalist accumulation, often mediated by science, the state, and international capital (Moore 2000; Beckert et al. 2021)—Lassa fever can be analytically approached as a biomedical resource embedded in a geographically and ecologically defined region. Its "belts" are not only clusters of persistent viral transmission, but also sites of data extraction, pathogen surveillance, and clinical trials, thus becoming a spatialized frontier of opportunity for global health actors. Like mineral-rich areas or forest frontiers, these "belts" become valuable only when they are aligned with broader regimes of scientific, financial, security, and geopolitical interest.

The value of Lassa fever has fluctuated over time, shaped not by changes in its actual impact on local populations, but by shifting geopolitical narratives, donor priorities, and scientific funding landscapes. As Lakoff (2010) has shown, the rise of global health security has refocused attention and resources on infectious diseases that pose potential transnational threats, rather than those with the greatest local burden. Under this paradigm, diseases are prioritized not for their endemic presence or chronic impact, but for their ability to trigger global emergencies or disrupt geopolitical stability. Lassa fever, long neglected despite its potential threat to local communities, emerged as a disease of interest only when it was framed as a potential bioterrorism threat in the immediate aftermath of the US anthrax attacks, and again as a regional and international

pandemic risk during and after Ebola. These moments of crisis rendered Lassa visible and valuable to external funders, generating investments in laboratory infrastructure, training programs, and cross-border surveillance systems.

In this sense, the "Lassa frontier" is more than just a metaphor. It names a real political-economic transformation in how West African ecologies and their pathogens are brought into global regimes of knowledge production. Health workers, researchers, and communities in places like Bong County have become part of a pathogen economy—one that depends on their bodies, labor, blood samples, and compliance for the generation of data. The virus itself becomes a source of biomedical capital, useful to research institutions, pharmaceutical firms, and global health agencies seeking to develop vaccines, diagnostics, and therapeutics under the guise of anticipatory regimes. But as in natural resource frontiers, this process raises questions about ownership, benefit-sharing, and long-term sustainability. Who controls the knowledge and technologies produced through Lassa research? How are the risks and rewards distributed? And to what extent are local priorities shaping research agendas, as opposed to being shaped by them? These questions underline the importance of applying political ecology frameworks to global health (King and Crews 2013), drawing attention to the material, political, and epistemic conditions that underlie disease-focused interventions.

In this light, Lassa fever is not simply a biomedical phenomenon to be controlled, but a socially and politically constructed resource whose significance is shaped by historical neglect, episodic attention, and the uneven geographies of global health investment. Understanding its fluctuating value requires attention not only to its virology

or clinical features, but also to the commodity logics and frontier dynamics through which it is made visible, governable, and investable on the global stage.

1.5. Conclusion: Vulnerability, Potential, and the Politics of Spatial Designation

The framing of West Africa as a space of pathological risk has long informed how the region is imagined, studied, and governed within global health. This imaginary has contributed to the emergence of layered spatial designations—from "endemic zones" to "hotspots" to "Lassa belts"—each of which carries distinct implications for how disease is understood and how resources are mobilized. These disease geographies are not merely descriptive; they are productive tools that shape how the region is rendered intelligible to global health actors, guiding funding flows, research agendas, and preparedness policies. As virulent pathogens such as Lassa fever continue to circulate, these spatial framings have deepened, transforming parts of West Africa into nodes of epidemiological concern and laboratories of global health interventions.

In this context, Lassa fever research exemplifies how vulnerability and potential coproduce one another in global health's political economy. On the one hand, the designation of West Africa—and Liberia in particular—as Lassa-endemic legitimizes investment, surveillance, and innovation. On the other hand, it exposes affected communities to the precarities of a research ecosystem governed by external priorities. As this chapter has shown, scientific interest in Lassa fever has followed a "boom-and-bust" pattern, characterized by intensive research and funding surges during outbreaks, followed by long intervals of neglect once crises subside. This reactive cycle mirrors a broader logic of global health anticipation (V. Adams, Murphy, and Clarke 2009), where

speculative risk—rather than sustained health infrastructure—drives the mobilization of attention and resources.

Liberia's trajectory within the Lassa fever research landscape illustrates this dynamic. From being a site of neglect to becoming a focal point for international scientific collaboration and biosurveillance infrastructure, the country has been shaped by both its epidemiological profile and its strategic utility within global health circuits. While moments of high investment—such as post-outbreak research projects and vaccine trials—have offered opportunities for capacity building and technological development, they have rarely translated into enduring public health gains for affected communities. Instead, research agendas often remain externally driven, temporally bounded, and disconnected from local health priorities.

To break this cycle, a fundamental shift is needed—one that moves beyond crisis-driven funding toward long-term, locally embedded commitments to infectious disease research. This includes building and sustaining regional research infrastructure, investing in national scientific leadership, and ensuring that research partnerships are equitable and accountable to the communities they engage. Only by addressing the structural roots of this cyclical neglect can Lassa fever research contribute not just to scientific advancement, but to lasting public health improvements in West Africa. In doing so, the region may be reimagined—not simply as a space of endemic vulnerability, but as a site of scientific agency and health sovereignty.

Chapter 2

“Blood for Cash”: An Extractive Exchange in the Lassa Belt

2.1. Introduction

The morning fieldwork routine of the Lassa study fieldworkers briefly transformed the research villages into field laboratories, visited by teams carrying coolers of vacutainers, registers, and forms, as well as performing the familiar choreography of greeting, explaining, and puncturing a vein. While the official purpose of the study was to ascertain the seroprevalence of Lassa fever in the region, the encounter was anchored by a second gesture: the small amount of cash offered once the needle was removed. Some participants viewed that amount as mere reimbursement, while others described it as a price confirming that something valuable had been taken. In this context, a blood draw was never merely a clinical technique; it was a social transaction that had to be made intelligible, legitimate, and safe. In Bong County, this legitimacy is often conveyed through a spatial label—“the Lassa belt”—which circulates between Phebe Hospital and households in surrounding communities as a shorthand for where danger is presumed to reside. This label provides an explanation in advance as to why researchers come here, why they ask for blood, and why people might agree to it. However, this apparent obviousness raises ontological questions such as how a locality becomes the “right” place for invasive research, and what kinds of histories and expectations are folded into that “right place for the job” (Clarke and Fujimura 1992).

This chapter approaches “blood for cash” as an analytical gateway to answering these questions, arguing that the idiom of the “belt” and compensation practices jointly

translate epidemiological risk into exchange value. Beyond being only economic or symbolic, this exchange is saturated with moral expectations and rumors, given that money and blood circulate with tangible consequences. Therefore, reading sampling as an extractive exchange helps to track how global health projects become local contracts and how local memories trigger critique and negotiation of those contracts.

The post-Ebola period is crucial for understanding why the Upper Guinean forest is so often perceived as a geography of danger. The 2013–2016 West African Ebola epidemic, which was most devastating in Guinea, Liberia, and Sierra Leone, killed more than 11,000 people and shifted the focus of emergence toward ecology and place (WHO 2016b). In policy and media narratives, the forest repeatedly appears as the scene of origin where biodiversity, mobility, and human-wildlife contact are used to explain spillover, and where surveillance and research are presented as the rational response. According to Wald (2008), this narrative work stabilizes outbreaks through plots of origin, spread, and control that assign explanatory weight to particular landscapes and the people who inhabit them. In this sense, the Upper Guinean forest is not only celebrated as a biodiversity hotspot (Myers et al. 2000), but it is also recognized as an ecological treasure and an epidemiological risk (Guégan et al. 2020).

Thiongane's (2013) concept of "the construction of a guilty ecological space" becomes useful here as it highlights how epidemiological cartographies can moralize ecology by attributing epidemic potential to an area and, by extension, to its inhabitants. Once a space is deemed guilty, its residents are cast in two roles: as individuals at risk and as individuals through whom risk can be recognized and controlled. Blood therefore becomes the privileged medium for this translation because it promises a portable trace

of exposure that can be transported from village to laboratory and incorporated into global evidence infrastructures. The result is a geography in which danger and value are coproduced, and where the right to detect the invisible agent is quietly coupled with the right to sample. The Lassa belt in rural Liberia thus appears to be one local manifestation of this wider post-Ebola revaluation of landscapes and must be understood as a negotiated outcome rather than an obvious ecological fact.

Belt-making also draws on older genealogies of medical geography that predate Ebola and Lassa by many years. West Africa's reputation as the "white man's grave" summarized imperial concerns about climate and mortality, justifying tropical medicine as a form of knowledge and governance (Curtin 1990, 1961). Colonial and early postcolonial health programs established their authority by transforming heterogeneous landscapes into comprehensible units—zones, foci, and endemic regions—whose boundaries made intervention appear scientifically necessary. As W. Anderson (2006) demonstrates, such classifications were never neutral; they were intertwined with projects of governance and moral judgments concerning hygiene, mobility, and labor. Tilley's (2011) account of "Africa as a living laboratory" further clarifies how African spaces became places where methods were tested and universalized, often treating local lives as experimental infrastructure in the process.

Within these histories, the concept of endemicity is powerful because it normalizes the idea of persistence: a disease becomes "specific" to a place, and the place becomes "specific" to the disease. Packard (2016) argues that global health has repeatedly relied on such framings to prioritize technical solutions while sidelining political economy and inequality. Contemporary hotspot language is thus less a rupture

than a rebranding, updated with new metrics, pathogens, and security logics. The residue of these histories is important from an ethnographic perspective because it influences how people interpret outsiders who request biological access, and it provides a vocabulary through which extraction can be suspected as exploitation. In Liberia, where concession economies and transnational expertise have long shaped rural life (Mitman 2021; Paczynska 2016), blood sampling enters a field already characterized by earlier forms of extraction, compensation, and uneven returns. This chapter therefore approaches biomedical research as a historically situated practice that reactivates rather than transcends older relations between knowledge, value, and vulnerability.

The comparative reference point for interpreting "belt" as a spatial technology is the "meningitis belt," which was established through mid-twentieth-century epidemiological research linking seasonal epidemics to climate across a broad band of sub-Saharan Africa (Lapeyssonnie and OMS 1963). Thiongane's (2013) work on meningitis governance shows that the belt became established not only due to climate science, but also due to the stabilizing influence of institutions, which established thresholds, maps, and response scripts that could travel across borders. The concept of a "belt" does more than describe distribution; it establishes a broad enough framework to be relevant to policy and flexible enough to endure uncertainty, while still suggesting ecological inevitability. When the phrase "Lassa belt" circulates in Bong County, it inherits this legacy of "belt-making" as a tool for governing epidemics through space, even when spoken in vernacular registers. Its local uptake is analytically significant because it demonstrates that people can employ "belt talk" pragmatically—to explain recurring fevers, anticipate clinical suspicion, or secure attention and resources—without necessarily embracing the moral weight the label carries.

At the same time, belt talk can attach stigma to a particular place, producing a sense of being perpetually watched or blamed. Preparedness infrastructures intensify these effects by converting future catastrophe into present programs of anticipation such as surveillance, scenario planning, and studies designed to detect danger early (Lakoff 2017). Additionally, Caduff (2015) adds that "public health vigilance," which can also imply anticipation, is a "curious and interesting techno-political project obsessed with catastrophic events." In this context, serosurveys do not merely occur in the belt; they contribute to the production of the belt as an entity that appears to necessitate the continuous extraction of evidence (see also Mitman 2024b). Treating "belt" as an active process—"belt-making"—therefore foregrounds the labor of classification that ties spatial labels to the material act of blood taking.

Once blood becomes the hinge between preparedness and place, biomedical research can be understood as a specific type of extractive economy. Sunder Rajan's (2006) analysis of biocapital illustrates how value is generated by transforming living matter into intellectual property, clinical evidence, and investable promises, often through asymmetries between sites of extraction and sites of accumulation. Similarly, Petryna's (2009) analysis of how experiments travel demonstrates how clinical research enlists populations from unequal landscapes, exploiting regulatory gaps and economic precarity to produce evidence. Focusing on substances rather than protocols, Waldby and Mitchell (2006) theorize "tissue economies" in which blood and other tissues circulate as gifts, commodities, and infrastructures, while moral discourse often masks economic logics. Building on this, Cooper and Waldby (2014) introduce the concept of "clinical labor," describing the work that bodies perform when they submit to procedures, endure inconvenience, and adapt to research schedules.

These frameworks clarify why “blood for cash” is not a marginal incentive in the Lassa belt, but rather a practice of valuation that renders bodily participation commensurable with money and therefore comparable to other extractive relations. Studies of extractivism demonstrate how benefit sharing can serve as both recognition and pacification, generating consent while preserving structural inequalities (Mitman 2021; Li 2007). While this chapter does not claim that blood is simply a commodity like rubber, it does demonstrate that the social form of the transaction—contract, compensation, and expectation of returned benefits—resonates with the frontier economies that are familiar in Liberia. Viewing sampling as an extractive exchange also avoids romanticizing “voluntariness,” as it acknowledges how participation is negotiated within constrained livelihoods. Furthermore, it highlights how research depends on returns that are credible locally, even when the primary benefits of knowledge are realized elsewhere.

However, extraction is never a smooth process; it is characterized by mistrust, rumor, and the memory of earlier predations, which can make biomedical procedures seem threatening. White’s (2000) study of “vampire” rumors demonstrates how narratives of bodily theft can function as a form of popular historiography, translating opaque systems of labor, medicine, and authority into memorable stories about extraction from the living. Geissler’s (2005) work on “blood-stealing” accusations surrounding medical research frames rumor as a local critique of unequal knowledge relations, particularly when venipuncture is perceived as intrusive and poorly accountable. Geissler (2015) later describes global health research as a para-state formation whose collaborative ethos can normalize unspoken inequalities, a condition that often breeds suspicion even when conflict is avoided. The Ebola crisis intensified

these dynamics: quarantine, triage, and emergency infrastructure often deepened mistrust and generated new stories about what outsiders do with bodies. Research into Ebola communication suggests that attempts to "correct misinformation" are ineffective when they disregard the political context that rumors reflect, such as histories of abandonment, violence, and unequal care (Wilkinson and Leach 2015; Chandler et al. 2015).

In Bong County, memories of colonial extraction and exploitation give blood talk a particular charge as they link the needle to longer stories about taking without adequate return. While consent scripts and community meetings are necessary, they are insufficient because what matters is whether the encounter produces believable reciprocity. Rumor does not merely threaten research; it shapes it by forcing staff to demonstrate transparency, respect, and generosity, even when structural constraints limit what can be offered. By examining how blood talk circulates across households, clinics, and research staff conversations, this chapter illustrates how suspicion and participation can coexist and how acceptance may be pragmatic rather than trusting.

The practical work of making reciprocity believable often falls on local intermediaries, such as health workers, fieldworkers, and community mobilizers, whose labor transforms global research designs into locally workable encounters. Ethnographies of medical research in Africa emphasize that field staff act as brokers, translating protocols into local terms, managing expectations, and absorbing frustration when projects do not meet community expectations (Kingori 2013; S. Molyneux and Geissler 2008). Brokerage involves moral and emotional labor because intermediaries must persuade their neighbors while remaining accountable to supervisors and ethics

committees. Community buy-in is thus achieved not only through information, but also through performances of belonging, repeated explanations, and the careful staging of meetings that situate blood taking within narratives of care, protection, or collective good. However, buy-in is also influenced by benefits, particularly when participation involves discomfort, loss of time, and social risk. Empirical ethics research shows that payments and other benefits are viewed ambivalently: they may be welcomed as fair compensation for inconvenience, but also feared as an undue inducement or interpreted as the commodification of people, which can put a strain on social relationships (Njue et al. 2015; S. Molyneux et al. 2012).

Similarly, guidance on research in low-resource settings stresses that externally sponsored studies must guard against exploitation, while acknowledging that participants may reasonably expect tangible benefits when research intersects with fragile health systems (McAdam 2004; Amerson and Strang 2015). In the Lassa belt, therefore, the cash payment communicates what researchers consider participation to be worth, and signals whether the burdens absorbed by households are recognized. However, payment can also have wider repercussions, reshaping household dynamics, raising expectations for future studies, or provoking jealousy and conflict. By foregrounding compensation as a social practice, this chapter demonstrates that ethics is enacted not only in review boards and consent forms, but also in households and palaver spaces, where people debate the fairness of the exchange. This focus sheds light on local researchers as communicators and negotiators whose improvisations sustain research relations, even when formal ethics frameworks offer little guidance on the practical politics of payment.

The chapter's central argument is that the "Lassa belt" label and "blood-for-cash" transactions jointly form a vernacular contract that manages uncertainty by converting a risky bodily act into a familiar exchange. Designating an area as the "Lassa belt" can legitimize participation by presenting research as fitting for the location, and by transforming endemicity into a shared explanation rather than an external accusation. However, the label can also perpetuate stigma and surveillance, making villages feel perpetually under suspicion in ways that interact with malaria-endemic logics and everyday hardship. The "blood-for-cash" contract offers an immediate return that can be weighed against the perceived invasion of venipuncture and concerns about what will be done with the blood. This return is modest yet significant because it asserts that a bodily contribution deserves recognition, and that research should not be one-sided. Yet cash also makes valuation explicit and invites comparison—"Why this amount for this much blood?"—thereby opening space for critique.

2.2. From Meningitis Belt to Lassa Belt: The Genealogy of a Public Health Spatial Category

If the amount of cash makes blood negotiable, the label "belt" makes the area susceptible to research by translating a complex epidemiological situation into an apparently self-evident spatial form. In my introduction, I argued that "blood for cash" is not an ethical footnote, but rather part of the infrastructure that makes serosurveillance locally actionable. Here, I extend that argument backward into the history of classification by unpacking the term that repeatedly anchored conversations at Phebe Hospital and in surrounding villages: "the Lassa belt." At first glance, "belt" appears disarmingly ordinary, and dictionaries reflect this by defining it as both a wearable strip

and an “area… known for a particular characteristic,” such as the “cotton belt” (Dictionary n.d.). Yet the shift from waistline to territory is not innocuous, because it transforms geography into a container for causality, suggesting that a characteristic is not simply present in a region, but is somehow part of it.

Classification scholars have long shown that such labels do not merely describe the world; they help to make the world governable by stabilizing categories that can be counted, mapped, funded, and acted upon (Pels 2022). In Hacking’s (1995) terms, classifications can also generate “looping effects,” where being named changes how people understand themselves and how institutions treat them (see also Tsou 2025). When “belt” is used in public health, it therefore functions less as a metaphor and more as a practical epistemic device. It compresses uncertainty into a band, converts dispersed outbreaks into a continuous zone and invites an anticipatory posture in which surveillance and research appear obligatory rather than optional. This is precisely why “belt” matters for the political ecology of biomedical research in Liberia: it is a word that ties the legitimacy of extraction (blood taking) to a spatial narrative about where disease belongs.

The classic template for this spatial narrative is the “meningitis belt,” the durability of which is largely due to epidemiological work linked to the World Health Organization (WHO) and the authority of a canonical monograph (Fig1). Lapeyssonnie’s “Cerebrospinal Meningitis in Africa,” published as a WHO Bulletin Supplement in 1963 (Lapeyssonnie and OMS 1963), is widely regarded as the foundational definition that established the belt as a coherent epidemiological object. Subsequent accounts describe how the belt was not only delimited by latitude—often summarized as a zone

between approximately 4° and 16° north—but also by rainfall isohyets, frequently cited as approximately 300–1,100 mm of annual rainfall in a single rainy season (García-Pando et al. 2014; Palmgren 2009). The point is not that these boundaries were wrong, but that they were workable: they created a geography that could be acted upon, informing surveillance, vaccine strategy, and emergency response across many countries. Later epidemiological and climatological refinements did not dissolve the belt; rather, they updated it precisely because the belt had become more than a hypothesis—it had become an operational terrain for public health (Cliff et al. 2025).

Thiongane's (2013) anthropological analysis takes this further, showing how the "belt" became an epidemiological puzzle whose solution required coordinated efforts of data, institutions, and urgency narratives, with "the belt" operating as the shared frame that made disparate outbreaks legible as a single problem. In this sense, the meningitis belt was not simply discovered in nature, but assembled through the mutually reinforcing authority of maps, thresholds, and response repertoires. The "belt" thus achieves a calibrated simplification: it reduces complexity enough to enable action, while maintaining the aura of ecological inevitability that makes action appear scientifically compelled.

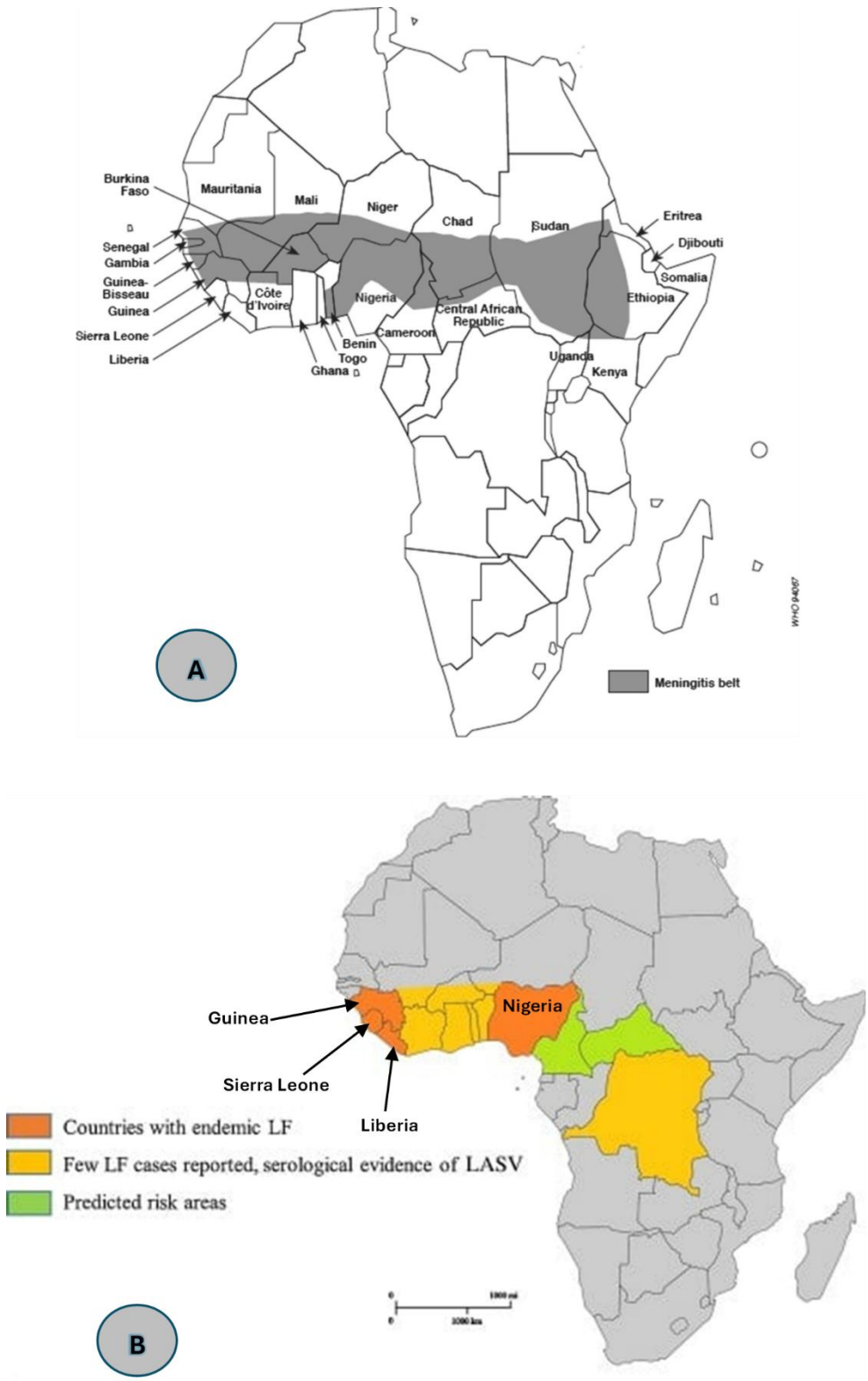

Figure 7: *A) The Meningitis Belt (Extracted from García-Pando et al., 2014). B) Lassa Endemic Zones (Extracted and Adapted from Aryal 2025).*

The power of the “belt” as a public health measure becomes even clearer when we consider infectious diseases alongside other domains in which statistical practices have produced regionalized pathologies. Nancy Rose Hunt’s (2017) work on colonial Central Africa illustrates how demographers and colonial medical authorities contributed to the creation of the so-called “Central African infertility belt,” a concept that solidified reproductive difference as a spatial fact through what she describes as a fundamentally statistical construction. Here, “belt” does not refer to a pathogen, but to a demographic anxiety. The mechanism shown here is that numbers and surveys do not merely reveal low fertility; they can authorize an entire geography of deficiency that becomes subject to expert intervention. Hunt’s argument is particularly relevant to this chapter as it highlights how belts can be created based on the political requirements of governance—what must be monitored, corrected, or explained—rather than stable ecological boundaries.

In colonial and postcolonial settings, such constructions are rarely neutral because they contribute to broader projects that categorize African spaces as sets of problems to be solved, often by the intervention of external experts and through extractive knowledge practices. This is why “belt-making” resonates with the earlier framing of the Upper Guinean forest as a “guilty ecological space,” as both concepts spatialize responsibility and risk, potentially turning inhabitants into reserves of data and explanations. At the same time, Hunt’s analysis helps to avoid the simplistic accusation that “belts” are merely colonial impositions, as it demonstrates that they are also practical assemblages which gain momentum through everyday activities such as counting, narrating, and acting. This momentum matters ethnographically: once a belt exists, communities and clinicians can also use it strategically or defensively to demand

attention, resources, or recognition. The ontological question is therefore double-edged: belts can stigmatize and extract resources, but they can also become locally meaningful idioms that reframe neglect as entitlement to care. This ambivalence reappears in Bong County's "Lassa belt," where naming can function as both authorization and vulnerability.

Against this background, the "Lassa belt" is best approached as an emergent and unevenly institutionalized spatial form rather than an officially recognized WHO category. First identified in Nigeria in 1969, contemporary global health descriptions typically frame Lassa fever as endemic to parts of West Africa rather than as a single continuous belt (CDC 2025; WHO 2024). Notably, the WHO's fact sheet lists several countries where Lassa fever is known to be endemic (including Guinea and Liberia), while also acknowledging uncertainty beyond these lists. This formulation favors the use of "endemicity" language over "belt" language (WHO 2024). Yet "Lassa belt" clearly circulates across scientific writing and practice, suggesting that it already performs a classification function even without formal standardization. In the Liberian setting most relevant to this chapter, a striking example is a piece in the *American Journal of Tropical Medicine and Hygiene* explicitly titled "Learning in the Lassa Belt," written from Phebe Hospital in Suakoko, Bong County (Sandige 2018)—the same belt in which I conducted my fieldwork.

Beyond Liberia, recent biomedical and public health publications use "Lassa belt" to refer to a zone in West Africa encompassing multiple countries (Hamam et al. 2024). Similarly, social research on Lassa fever has invoked "the Lassa belt of West Africa" as a region experiencing recurring outbreaks (Usifoh et al. 2019; Wilkinson 2015). Importantly, "Lassa belt" is not only a transnational descriptor but also appears as an internal

administrative geography. For example, a 2017-semester bulletin from the National Public Health Institute of Liberia (NPHIL) referred to affected areas as "counties constituting the Lassa belt" of the country (NPHIL 2017). This double usage—regional and intranational—matters as it shows that "belt" can scale up or down depending on what needs to be governed: spillover fears at the regional level or surveillance priorities at the country level. However, what is gained in communicability can be lost in ecological nuance because the "belt" form encourages continuity even when transmission dynamics and vulnerabilities are patchy, seasonal, and socioeconomically differentiated. Therefore, the central analytical task is not to police whether "Lassa belt" is correct, but to track what the label does in practice: what it renders obvious, what it obscures, and what it enables in the politics of biomedical research and response.

In Bong County, the "Lassa belt" label performs at least three functions that are directly connected to the extractive exchange. First, it vernacularizes the often-abstract concepts of "endemic zones" and "hotspots" by offering a spatial image that people can inhabit and point to, thereby turning clinical suspicion into a shared local common sense. Second, it lends a moral dimension to preparedness by implying that certain communities are perpetually in close proximity to dangerous pathogens, which can then normalize repeated sampling as reasonable and even necessary, particularly in a post-Ebola viral atmosphere where anticipation has become institutionalized and "being ready" is seen as a moral imperative (see Lakoff 2017 for details on preparedness). Third, "belt talk" subtly reorganizes benefit expectations by implying that living in the "belt" is a form of exposure—an ongoing burden—which can make compensation feel less like a gift and more like a minimum return owed for inhabiting a high-value research landscape. In this way, "belt-making" aligns with the transactional framing of participation: if

endemicity is recast as a permanent feature of a place, blood becomes a regular resource extracted from it, and cash becomes the visible token that acknowledges (without resolving) the imbalance between taking and giving back.

At the same time, however, belt language can exacerbate stigma by attaching a disease identity to a geographical location, which may affect marriage prospects, mobility, reputation, and how healthcare workers interpret symptoms during the triage process. The ontological promise of "belts"—clarity—thus carries an ethical risk: it can slide from explanation to blame, from preparedness to surveillance, and from recognition to fixity. This is why this chapter does not treat "the Lassa belt" as a neutral descriptor, but as a contested category whose apparent simplicity is achieved through political and epistemic labor. Once we recognize this labor, we can understand why community acceptance of research may increase when "belt" is invoked (as it makes the encounter intelligible), while rumors about blood can simultaneously intensify (as intelligibility does not erase historical memories of extraction). In short, the belt can encourage participation even as it perpetuates the very suspicions that participation must address continuously. In the pages that follow, I analyze the circulation of the term as evidence of how biomedical research becomes possible in rural areas, through spatial categories that authorize extraction and exchanges that make it tolerable. This brings us back to the ethnographic core of the chapter, where "the belt" is not an abstract concept, but a word uttered during a blood draw, at the precise moment when place, pathogen, payment, and memory are forced into the same sentence.

2.3. Appropriating the "Lassa Belt" Around Phebe Hospital: "Endemic Place-Making" in Bong County

While the previous section traced the evolution of "belt" from an expert cartographic concept to an everyday idiom used in wards and households to describe a condition of life lived under recurrent febrile uncertainty, the ethnographic concern in Bong County is what happens when this category is no longer confined to expert cartography. Liberia has long been considered endemic to Lassa fever, with Bong County repeatedly appearing in surveillance analyses and outbreak reports as one of the most affected areas of the country (NPHIL 2024; Jetoh et al. 2022; Mulbah 2020). However, endemicity is not merely a technical descriptor; it is also a social diagnosis that can affect the reputation of a place, attach risk to particular communities and invite specific types of institutional attention, including research attention. This is visible in the Enable program, funded by the Coalition for Epidemic Preparedness Innovations (CEPI), which selects sites where available data suggest a relatively high risk, and where specialized diagnostic and care infrastructures exist, such as Phebe Hospital, the Liberian study site for CEPI's multicountry seroprevalence study (CEPI 2022b). In other words, the "belt" does not simply exist and then get studied; it is performed through the convergence of surveillance logics, outbreak preparedness, and research infrastructures that render certain localities visible as high-value epidemiological terrain. What my ethnographic account adds here is that villagers and health workers actively contribute to this visibility of the "belt" by using it to explain past deaths, justify vigilance, and interpret the reasons why "people from afar" come to collect blood. The analytical benefit is to treat "Lassa

belt" as a form of endemic place-making—an emic category that is simultaneously shaped by, and shaping of, the political economy of outbreak knowledge.

Bong County's "belt talk" condenses the specific history of Lassa episodes into a spatial shorthand that indicates where danger is anticipated. During my fieldwork, communities such as Phebe Airstrip, Suakoko, and Rubber Factory were repeatedly mentioned in local risk narratives and epidemiological work (Mulbah 2020; NPHIL 2024). These localities subsequently became convenient field sites near a referral facility. For example, a thesis based on fieldwork in Bong County and secondary data reports statistically differentiated risk across these communities, describing Rubber Factory as higher risk than Phebe Airstrip and Suakoko—an observation that aligns with how residents hierarchize vulnerability across zones and settlements (Lewis, 2023). Meanwhile, outbreak documentation and case reporting repeatedly draw attention back to Bong County and specific districts/communities during waves of confirmed cases, creating the impression that some places are under closer surveillance than others (NPHIL 2024).

A notable illustration is how Rubber Factory is mentioned in outbreak investigation and response reports, which helps to explain why it has also entered everyday speech as a kind of "index village" for Lassa fever risk (Hamblion et al. 2018). These citations are important because they demonstrate that the "belt" label is not purely metaphorical; it is connected to the uneven distribution of detection, response, and memorialized loss. However, the same unevenness raises a critical methodological warning: a place becomes "most affected" partly because it is most surveilled, sampled most frequently, or most connected to diagnostic capacity. This means the belt can reflect infrastructures

of seeing as much as infrastructures of transmission. The "Lassa belt," then, is best considered an overdetermined category: at once an epidemiological pattern, an infrastructural effect, and a moral geography.

In addition to documented outbreaks, many of my informants recounted having been victims or knowing community members who have been victims of Lassa fever. This was the case of Koikoi[7], a young man in his thirties, who still remembers this perilous and often fatal disease. Koikoi, like some other members of his community, consented to taking part in the Lassa research study, and gave blood samples three times with, according to him, three-month intervals between the sampling periods, although the study protocol planned for six-month intervals between the follow-up samplings. He recalled that when his household was selected for the study, he willingly agreed to participate because he knew that Lassa fever was prevalent in his community and bitterly reported having lost his friends to this disease: "Here, last year, Lassa fever rate was too high in Phebe Airstrip. Two of my friends died from it. So, when they came and mapped the house [referring to GPS coordinates collection], there were fourteen persons in this house here. They did the testing for all of us. They carried our blood; they were using our blood for specimens. So, the study wasn't bad for me." According to Koikoi, the belief that his community was affected by Lassa fever was the main reason he agreed to participate in the research study and donate his blood, despite the distrust and fear of giving blood that existed in his community.

In fact, Koikoi argued that "Since the study started, we haven't experienced any symptoms in Zone 1 here, because I'm residing in Zone 1 here. We haven't seen anyone

[7] All personal names of informants in this thesis are pseudonyms used to protect the identity of the persons concerned.

here with the symptoms of Lassa yet. But before, sometimes, 2–3 persons..., two of my friends died from it." Koikoi's reiteration of the deaths of his two friends from Lassa fever a year before the commencement of the research study on the disease is indicative of his concern regarding the lethality of this infection that is prevalent in his community. Consequently, the presence of a research team in his community focusing on this disease was a source of hope for him, and he perceived the necessity of contributing to finding remedies for this fatal disease through his participation as a research subject.

The vignette above, in which I interact with Koikoi, illustrates the moral geography of the Lassa belt by demonstrating how participation is narrated as both pragmatic and reparative. When Koikoi says, "They carried our blood; they were using our blood as a specimen," he displays an awareness that his body is entering a technical chain of custody, yet he immediately justifies the extraction by saying that Lassa is "too high" and that friends have died. In that moment, the belt operates like an evidentiary common, authorizing the leap from private blood to public knowledge by rendering the locality as already claimed by the disease. His recollection that the follow-up intervals felt like "three months" rather than the protocol's "six" is also analytically significant, as it reveals how research time is experienced as more intense than the written schedules suggest. This experiential compression is important: in contexts where clinical care is scarce, repeated visits may be perceived as attentive care, which can lead to therapeutic expectations, despite what the consent scripts may say (Leach and Fairhead 2012).

Koikoi's subsequent assertion that "since the study began, we haven't encountered anyone with Lassa symptoms" further illustrates how individuals evaluate research not only as extraction but as potential protection, an interpretation that can

subtly reframe participation as a form of prevention. This interpretive move is not naive; it is a rational attempt to establish causality out of proximity, particularly in places where pathogens are understood through seasonal common sense and social memory rather than laboratory confirmation. What emerges here is a belt whose boundaries are defined by tales of sudden death, but whose legitimacy is reinforced by the arrival of teams that appear to take these tales seriously. Conceptually, the belt seems to be both a source of hope and a device that enables research.

Institutions around Phebe Hospital play a key role in stabilizing this belt idiom by producing a local public with a basic understanding of biomedical concepts, albeit an uneven and strategically deployed one. Phebe's current status as a major referral facility in Suakoko District is tied to its longer Lutheran medical history, which includes relocation and expansion in Bong County in the mid-1960s, as well as its ongoing role in training and service provision (Miller 2011; Kanagasabai 2024; Sidenvall n.d, 17; Phebe Hospital n.d). Phebe Hospital, although within Suakoko District, is not located in any specific village; rather, it forms its own compound outside the villages, known as the Hospital Compound, which includes its guesthouses for staff. Phebe Airstrip Community (PAC) is the nearest village to the hospital, located approximately three hundred meters away, while Suakoko and Rubber Factory are located about fifteen minutes away by motorbike. Importantly, this settlement of the hospital, with guesthouses, staff circulation, and a spatial buffer between it and nearby villages, helps to explain how biomedical language is disseminated, not only through outreach messages, but also through the everyday copresence of students, staff, families, and community members moving between the wards, the markets, the farms, and their homes. The nearby training ecology—Cuttington's health sciences training and Phebe's own training programs—

adds another layer by making “medical talk” ordinary talk in surrounding communities. When such institutions are established in a location for decades, they do more than simply educate communities; they produce hybrid epistemic environments in which people learn which terms carry authority in encounters with health workers and researchers. This is why the “Lassa belt” can circulate as a locally meaningful phrase, even though it is not an official WHO regional designation. People learn that certain spatial labels explain why attention is given and why certain bodily practices, such as testing, blood draws, and rodent control, are repeatedly encouraged. In this context, the belt is not only adopted, but cultivated through institutional density, chronic outbreak discourse, and the routine organization of health campaigns.

On the other hand, language appeared to play a crucial role in the adoption of the belt in these communities in Bong County. The Liberian term “Kolokwa” (often spelled “Koloqua”) refers to a colloquial register of English that is widely used as the lingua franca in the region. Linguistic studies of Liberian English emphasize how this register facilitates communication in multiethnic contexts while maintaining its own norms and pragmatic shortcuts (Singler 2012). In Bong County, the pragmatic advantage is clear: research teams do not face the same translation challenges experienced in Malinké- and Djallonké-speaking villages in the Faranah district of neighboring Guinea, where a related CEPI-funded project was implemented. Key biomedical terms such as “Lassa,” “malaria,” and “typhoid” can be used without the need for new vocabulary.

However, it is important to note that ethical literature on consent and engagement consistently demonstrates that the use of a shared language does not necessarily guarantee a shared understanding. The rationale behind this fact is that technical terms

can be reiterated with a high degree of accuracy while maintaining a certain degree of conceptual ambiguity, and comprehension is often based on trust in the messenger rather than on semantics alone (J. Osborne et al. 2021; Enria et al. 2016). In this context, “Lassa belt” acts as a bridge term, translating endemicity into a spatial common sense that is easy to understand without the need for the more abstract concepts of “seroprevalence,” “reservoir,” “endemicity,” or “hotspot.” The belt is therefore a vernacular technology of comprehension—imperfect, but operational—through which people become more or less knowledgeable about the disease, thus enabling them to evaluate whether research aligns with their experience of risk. By doing so, Kolokwa shifts the problem from translation to interpretation and from vocabulary to the politics of credibility.

In contrast, the Faranah study communities in Guinea are characterized by poor knowledge of Lassa fever (Douno et al. 2021), which should not be viewed as a mere deficit, but rather as a different configuration of visibility, diagnosis, and linguistic mediation. Ecological and serological studies in Upper Guinea demonstrate significant Lassa virus circulation in rodent populations and extensive human exposure, even in areas where reported acute cases remain low. This epidemiological pattern renders “endemicity without recognition” a genuine possibility (E. Fichet-Calvet et al. 2007; Mariën et al. 2025). In this Guinean context, the absence of a “belt” idiom is understandable: without frequent confirmed cases and without a nearby specialized referral facility with testing capacity, Lassa does not become the dominant narrative through which fever is interpreted. Douno and colleagues’ (2021) work on children’s rodent hunting and consumption practices in Faranah highlights how everyday zoonotic interfaces can become normalized rather than being seen as problematic. This further

complicates risk communication when research teams arrive to speak about invisible pathogens. Interventions such as rodent control trials in Upper Guinea also demonstrate that prevention programs must consider local livelihoods and domestic infrastructures, as well as knowledge gaps (Mari Saez et al. 2018). Adding to this is the language landscape with Malinké and Djallonké dominance, which compounds the challenge for translation into the search for locally meaningful equivalents for terms such as “Lassa,” “reservoir,” “endemicity,” and “seropositivity,” particularly when communities have long interpreted fever through the logics of malaria. In this context, Bong County’s “Lassa belt” does not demonstrate greater rationality; rather, it exemplifies the coproduction of diagnosis, infrastructure, and discourse that renders a biomedical category locally comprehensible.

2.4. What “Belt Talk” Does: Visibility, Participation, and the Politics of Research Access

Once the belt becomes part of everyday talk, it begins to perform institutional work, especially at the sensitive moment when researchers seek to gain access to people’s homes to map, test, and bleed. Community engagement scholarship emphasizes that participation in global health research is rarely driven by information alone, but rather by relationships, local authority structures, and expectations of benefit or harm (Tindana et al. 2007). Similarly, ethnographies of Ebola vaccine trials show that rumors, mistrust, and “trial talk” can spread faster than protocols and that engagement succeeds when local histories are taken seriously rather than dismissed as irrelevant (Enria et al. 2016). In Bong County, the term “Lassa belt” is precisely the kind of locally resonant framing that can lower the threshold of suspicion, as it suggests a shared

diagnosis and comprehension. Researchers are not inventing a problem but responding to an issue that residents have already identified. This shared diagnosis can serve as a moral alignment—"we are working on what is killing us here"—which helps to explain why, despite ambient fear of blood extraction, Koikoi frames the study as "not bad for me."

However, belt talk also serves to domesticate danger by normalizing the idea that certain places are perpetually destined for research. This makes extraction appear less like an exceptional intrusion and more like the routine cost of inhabiting an epidemiological category. This is one of the quiet effects of preparedness, because anticipation tends to distribute the labor of "being ready" onto those who inhabit the most surveilled landscapes, while simultaneously framing that distribution as morally necessary (Lakoff 2017; Caduff 2015). Within this logic, local gratitude for a large-scale epidemiological study—"The research team is doing tremendously well"—can be interpreted as more than mere appreciation; it also comments on the political economy of attention, in which the presence of research becomes a scarce resource to be secured, curated, and, at times, performed. In this context, a surveillance officer's remark, "Lassa fever is a nightmare in Bong County," does not simply report suffering; it presents a lasting crisis in a way that is recognizable to institutions accustomed to hearing about priority, urgency, and need.

By further suggesting that Lassa should simply be "considered like malaria," given that the outbreak is, in his own terms, "never-ending," the surveillance officer incorporates Lassa into a familiar African febrile ontology, where malaria serves as the default explanatory framework for persistent fever and recurrent risk. As research on the

idea that “fever equals malaria” shows, the equivalence between fever and malaria has historically been convenient for clinical practice and malaria control, but it has also become a pervasive discourse that can overshadow other causes and normalize misrecognition (Dixon and Chandler 2019; Beisel et al. 2016; Stoler and Awandare 2016). Further ethnographic accounts of malaria’s ambiguity show how malaria becomes a flexible category that absorbs multiple experiences of illness and uncertainty precisely because it is both ubiquitous and morally unremarkable (Maslove et al. 2009). In Bong County, therefore, “Lassa is like malaria” is not simply an exaggeration; it is a rhetorical strategy that simultaneously highlights the burden (“nightmare”) and makes it manageable by drawing an analogy with an endemic condition that communities and health services have long learned to live with. Yet this analogy is also politically charged because it can lead to the very naturalization that this chapter examines: if Lassa is portrayed as similar to malaria—ordinary, constant, and expected—then repeated household mapping, blood sampling, and research cycles can be justified as an inevitable part of life in the region rather than as a practice that requires continuous ethical consideration.

My point here is not to dismiss the claims of field officers as manipulation, but rather to interpret them as a form of expression emerging from the intersection of personal loss, institutional incentives, and the preparedness economy, in which discussing “risk” is a means of securing future support (Caduff 2015; Lakoff 2017). This is where the belt becomes most consequential as it aligns community memory of “quick death” with institutional scripts of chronic endemicity, making participation easier to solicit, even as it reinforces the idea that some communities are perpetually extractable. Once disease is normalized as “never-ending,” the subsequent question is not only why

blood is taken, but also what kind of return is owed for life inside an endless outbreak—an issue that leads directly into the "blood-for-cash" concept, which emerges as a vernacular attempt to price, negotiate, and morally stabilize that asymmetry.

2.4.1. "Blood for Cash": An Extractive Exchange in the Lassa Belt

"It's to you we're coming so, fine girl," said Niuma, my community guide, as he saw the woman to whom we were heading for an interview. "I hope you brought me plenty money," she replied, "because since the 'X University' people left, we're not getting any more money." "No, there is no money for now, it's one of the 'X University' doctors who wants to talk to you about the blood collection that happened here, that's all," Niuma answered, already anticipating the disappointment. It was in this brief and distant conversation between Niuma and the lady that I was introduced. I use "X University" to anonymize the name of the American partner university that was responsible for the implementation of the Enable Lassa Program at Phebe Hospital. Funded by CEPI, the program aimed to generate robust epidemiological evidence of Lassa fever in five West African countries, including Liberia and Guinea (CEPI 2020).

Suddenly (but not surprisingly, because everyone at Phebe Hospital referred to me as Dr. Moussa, since I was introduced as such at the beginning of my fieldwork at the hospital—people in this area do care about titles and have huge consideration for doctors), Niuma referred to me as "one of the 'X University' doctors." This was common whenever a fieldworker on the research team who worked in the community introduced me to community leaders in these localities. At the beginning of my fieldwork, the "X University" supervisory board members at Phebe Hospital informed me that, in accordance with the ethical considerations of the research study, their fieldworkers were

not permitted to direct me to the study participants, for the purpose of maintaining confidentiality and anonymity. However, they could introduce me to community leaders, and I had to work through these leaders to access the community and identify informants from both the Lassa research participants and non-participants. I had to clarify many times that I was not working for "X University," but was instead a social science researcher trying to understand community members' experiences of biomedical research, including the study that "X University" had implemented in their communities.

The lady, a household woman in her thirties, and Niuma, my community guide, knew each other, as they lived in the same community. As this conversation highlighted the expectation of money that Lassa research study participants had on seeing a researcher—or an alien at large—approaching them, I quickly followed on from my guide's introduction to explain more to the lady that the interview was free and voluntary, and that it did not involve giving $5 as was the case during the blood sampling activities of the Lassa research study. However, I felt embarrassed by the way she had shown her monetary expectations, and at the end of the interview, I gave her a small amount of money in local currency. She held it with gratitude as she thanked me for the gift, even though the amount was smaller than the US$5 she received from the research team whenever she gave blood samples.

The brief conversation between Niuma and the woman highlights how research encounters had already taken on a familiar social form in these villages. In this conversation, before I had even greeted the woman, I was folded into a moral economy of research, where the arrival of an outsider is perceived as bringing compensation. Even before I had the chance to explain what kind of "doctor" I was, my presence had already

been categorized according to a preexisting template in which outsiders arrive, ask for blood, and leave behind a small but memorable cash residue. Niuma's phrase, "one of the 'X University' doctors," was not simply an error; it was an interpretive shortcut that placed me within a local archive of recent visits, punctures, and envelopes. In the same way, the woman's response was not merely a request; it was an indication of what research had recently been in the village: periodic visits, blood taking, and small but dependable cash payments. In other words, biomedical research had been sedimented as a recognizable exchange form, and this recognition preceded any explanation I could offer. When I then clarified that I was not part of the "X University" team, that the interview was voluntary, and that it would not involve the US$5 distributed during samplings, her face registered both relief and loss. Her reaction did not feel like greed; it felt like an adjustment of expectations in an economy where cash is scarce and where biomedical research had briefly functioned as a predictable source of liquidity. In this sense, "blood for cash" encapsulates a pragmatic, vernacular theory of biomedical research, one that is formed less from protocol documents and more from repeated, embodied transactions.

The embarrassment I felt at being positioned as someone who should have "plenty of money" was therefore not a personal moral discomfort, but an ethnographic trace of how compensation becomes a moral language for judging the presence of research. While the earlier sections of the chapter traced how "belt talk" renders certain places legible as dangerous and therefore eligible for intensified attention, this vignette shows the next step in this process: once a place is legible, bodies inhabiting that place become accessible and extraction must be socially stabilized. This stabilization occurs through brokers, health messages, and the promise of follow-up. Crucially, it also occurs

through money, which acts as both an enabler and a flashpoint (Tindana et al. 2007). Money is simultaneously enabling and suspicious, which is precisely why it becomes the pivot of antagonistic discussions in the village, generating divergent readings about what is being bought and sold (Grady 2005, 2001). The analytic task that follows is not to judge whether people were "right" to hope for cash or "wrong" to distrust it, but to demonstrate how the research economy is formed at the intersection of poverty, endemicity, rumor, and ethical regulation. In doing so, we shift the debate from an individualized economic calculus toward a relational concept of extractive exchange, where blood circulates outward as biomedical value, while cash and care return in uneven and negotiable forms (Waldby and Mitchell 2006; Cooper and Waldby 2014; W. Anderson 2000).

The misrecognition of my role as an "X University doctor" in that brief conversation also highlights a deeper structural aspect of field research: how identities can be transferred to individuals in situations where institutions are more enduring than individuals. In these communities, "X University people" had become institutional shorthand for multiple actors—researchers, fieldworkers, supervisors, and drivers—that were condensed into a single recognizable figure. This is consistent with observations from other African research sites that villagers often relate to "the station" or "the project" or "mice catchers" rather than the fine distinctions between individual trials, protocols, and sub-teams, because the institutional presence repeatedly touches their lives (Fairhead, Leach, and Small 2006; Douno et al. 2021). The ethical rule that fieldworkers could not direct me to participants did not dissolve this institutionalization; instead, it redirected it through community leaders, thereby intensifying the role of brokers and gatekeepers in determining who becomes accessible. Scholarship on frontline research staff makes clear that fieldworkers regularly find themselves in a moral double bind: they

must meet recruitment targets and comply with ethical guidelines, while also maintaining local trust and managing expectations shaped by material scarcity (Kingori 2013).

When Niuma introduced me, he performed this double bind in miniature, offering a label that would make my presence intelligible while also attempting to preempt the money question. Yet the money question arrived anyway, because compensation had become part of the village's experiential definition of the research encounter, and experiential definitions are not easily overwritten by verbal disclaimers. This is why my immediate insistence that the interview was "free and voluntary" did not fully reset the situation; it only clarified that my visit did not activate the exchange mechanism that the woman recognized. The small amount I eventually gave her—framed as a gift rather than an entitlement—did not erase the structure either; it confirmed that money remains a dense sign in encounters with outsiders, even when the outsider is not formally distributing compensation. Here, the ethnographic point is not that "Africans expect payment," a trope that easily slides into moral judgment, but that in contexts where projects have intermittently functioned as welfare channels, money becomes a form of recognition, and recognition becomes a measure of relational accountability (Petryna 2009). The woman's statement—"since the 'X university' people left, we're not getting any more money"—can therefore be interpreted as a critique of discontinuity, a small statement about how research arrives, extracts, and departs, leaving behind a gap where benefits used to circulate. This temporal rhythm—arrival, extraction, departure—echoes what Adriana Petryna (2009) has described as the uneven plugging of experimental infrastructures into local health systems, producing expectations that often outlast the project itself. This chapter's contribution is to demonstrate that this rhythm is not only a

macro political-economic pattern, but also a micro phenomenology of anticipation, disappointment, and recalibration in everyday village life.

2.4.2. Participation as Resource-Seeking: Care, Scarcity, and the "Empty Choice"

Many informants repeatedly praised the research project for the free treatment they received while participating in the study. One woman once said, "The program was fine; when they come, if you get fever in your family, they'd check you, they'd give you money to get yourself medicine to treat yourself, or to carry you to the hospital; when it's serious, they carry you to the hospital, they cater to you; so, it was fine, it was too good; we even pray that they come back with different steps…." On closer inspection, the woman's statement is not a naive celebration of "science," but rather a practical description of what the project did in an environment where care is unevenly available. It diagnosed and triaged patients, financed transport or medicines, and, crucially, provided ongoing support when cases escalated. This cluster of benefits aligns with a recurring pattern in empirical bioethics and medical anthropology: people often participate in research to access attention, diagnostics, and treatment that routine services cannot reliably provide (Osamor and Kass 2012; Mfutso-Bengo et al. 2008; Kass, Maman, and Atkinson 2005).

These motivations are often not framed in the literature as confusion, but as pragmatic navigation within constrained systems where biomedical research infrastructures function as a parallel channel of care that is sometimes more predictable than public facilities. Kingori's (2015) notion of the "empty choice" further clarifies this by shifting the focus from the consent form to the political economy of options. When one pathway is well resourced and another is chronically underfunded, participation may be

formally voluntary yet materially compelled by scarcity. Following this logic, follow-up during the study period also signals the moral texture of care as accompaniment rather than merely a commodity. This is why it is often experienced as recognition that confers dignity as much as clinical service. This reality thus gives participation a dual vision: it is simultaneously an act of hope and a response to structural abandonment. The participant's praise evaluates both the state's absence and the project's presence.

In West African settings where triage logics have historically governed access to life-saving interventions, Nguyen's (2010) concept of "therapeutic citizenship" provides a useful framework for understanding how people position themselves within aid and care systems, converting participation into a claim on survival resources. If "belt talk" designates Bong County as a priority zone, research participation becomes one of the few ways in which residents can convert this designation into tangible benefits, such as tests, drugs, transport, and attention, before the project moves on. Here, ethics becomes more complex than the familiar binary of "incentive versus inducement," because what participants describe as "free treatment" is not peripheral; it is often integral to why research is considered valuable in the first place. Debates on "ancillary care" highlight this issue by addressing what researchers owe participants beyond the procedures required by the study protocol, particularly when study encounters reveal unmet needs that the local health system cannot address (H.S. Richardson and Belsky 2004). The key point of my argument is that participants do not separate research from care in the way that institutional documents do. They experience a blended assemblage in which blood draws, diagnoses, counseling, transport assistance, and treatment appear as one package of relational attention.

Following this logic, the 2008 PLoS Medicine workshop statement on ancillary-care obligations explicitly frames such obligations as care needs that are not required for scientific validity yet are ethically significant. This acknowledges that global health research often takes place in environments where unmet needs become apparent during the course of the research (Participants in the Georgetown University Workshop 2008). This framework helps to interpret the language of my interlocutors without pathologizing it: when a project repeatedly treats fevers, pays for transport, or provides clinical follow-up, people are trained to view research as a care institution. This makes later withdrawal feel like abandonment, which is why the plea, "we even pray that they come back with different steps," should be read as a commentary on the temporality of project-based medicine. In this sense, the "empty choice" concerns not only the enrollment process, but also the aftermath of exit, when project care diminishes and the old scarcity resurfaces. The ethical strain becomes sharper when we consider foundational claims that ethical research requires fair participant selection and a favorable risk-benefit profile. Scarcity can quietly distort both of these factors, meaning that "benefit" ends up doing the work that infrastructure should have done (Emanuel et al. 2004). This demonstrates that voluntariness is not merely distorted by compensation but is also shaped by the chronic shortage of reliable services, making even minor and conditional forms of care seem significant. This is not a reason to romanticize "resource-seeking," but it is a reason to treat it as an intelligent response to the uneven distribution of biomedical presence and absence.

2.4.3. Cash as a Vernacular Contract

In my daily interactions with community members in these localities, the same scene repeatedly emerged: a team "hanging around" the villages, mapping houses, requesting blood, and offering US$5, as well as follow-up and treatment. This repetition is important because it is through repetition that exchange becomes recognizable as an institution rather than an isolated event. The study's payment—always remembered with precision as "US$5"—functioned as a visible token that condensed the encounter into a simple, familiar formula: "blood for cash". What is striking here is that even people who refused to participate often accepted the basic premise of the formula; their disagreement was not about whether money was offered, but about what offering money implied about the value of blood and the intentions of the research team. Some residents saw the payment as enabling as it offset time, transport, and opportunity costs, and acknowledge that participation is worth it. Others, however, viewed it with suspicion, arguing that it suggests that blood is being purchased because it yields profit elsewhere, and therefore the small local payment is evidence of extraction, not fairness.

This ethical ambivalence is precisely what bioethics literature explores under the categories of undue inducement and voluntariness: while payments may encourage participation without coercion, they may also distort decisions by making risks harder to refuse, particularly in contexts of poverty (Grady 2005; Resnik 2015; Graboyes 2015). Yet my account suggests that the analytical center of gravity is not the individual's cognitive distortion, but rather the local production of an understanding of the encounter akin to a contract. People spoke as if a bargain had been struck—blood in exchange for money and medical support—and bargains invite moral evaluation. Once a bargain is socially

recognized, it can form the basis for both gratitude and accusation: gratitude from participants who feel recognized and supported, and accusation from non-participants who view participation as the sale of something that should not be sold. In other words, the envelope does not merely incentivize recruitment; it reorganizes the moral landscape by making value explicit, and thus open to debate (Waldby and Mitchell 2006). Thus, the concept of "blood for cash" illustrates how exchange is not only calculated, but also narrated, judged, and remembered as a social relationship.

At the initial stage of the Lassa study in Bong County, the social relationship between villagers and researchers failed to form because money was not included in the compensation package. According to the research team members, local populations were reluctant to participate without financial incentives, so the study protocol had to be amended in order to include the US$5. This example illustrates how ethics and social interpretation are interrelated. While a protocol amendment is often presented within research institutions as a technical adjustment to facilitate recruitment, ethnographically, it can be interpreted as a social diagnosis. The team recognized that "care" alone did not possess the persuasive power necessary to stabilize participation in this challenging environment. This recognition reveals a gap between the institutional imagination of altruistic participation and local histories of extraction, rumor, and economic scarcity. Bioethics debates about payment often assume that money is an optional add-on that threatens voluntariness (Resnik 2015). However, my account suggests that money can be a prerequisite for the research encounter because it acknowledges the arduousness of participation and aligns with local expectations shaped by prior projects.

Once money enters the package, it does not simply increase motivation; it changes the interpretive frame, because cash can be read simultaneously as enabling access to medicine and as a price tag that threatens to recode participation as sale. This does not mean the amendment was ethically "wrong"; it means the amendment should be analyzed as part of the exchange architecture through which research becomes doable. Here, the discussion of therapeutic misconception by Henderson and his colleagues (2007) is less useful as a means of diagnosing participant error and more useful as a reminder that, in practice, research and care can become indistinct, especially when material benefits are delivered through clinical idioms and institutional boundaries are invisible at the household level. In my fieldwork settings, this blurring extends further: "They'd give you money to get medicine" means that cash becomes a form of care. Therefore, refusing cash could mean rejecting a way of accessing treatment, while accepting cash could be socially redefined as bartering blood, which turns out to be precisely the moral tension that animates debates on "blood for cash."

While the influx of volunteers after payment was introduced could be seen as evidence of undue inducement, it could also be seen as evidence that the project finally aligned with the local moral economy of recognition, in which a tangible return is expected for a physical contribution. This distinction is important because it shifts the focus of criticism away from blaming participants for being "attracted by money," and toward examining the structural conditions that make money so persuasive. Here, Kingori's (2015) "empty choice" framework helps us to avoid moralizing: if structural scarcity makes research a means of accessing care, then cash is not merely a temptation, but a resource that enables people to act within their constrained options. However, the same scarcity also makes the ethics of payment more problematic because

what enables can also pressure. It is precisely this ambivalence that my concept of extractive exchange attempts to address without resorting to condemnation or celebration.

Furthermore, the broader poverty context makes the volatility even more predictable than exceptional. The World Bank (2023) reports on Liberia's poverty assessment highlight stark urban/rural disparities and the severity of rural deprivation. This baseline makes even small, predictable cash flows meaningful within household survival strategies. This contextual background illustrates how money can become infrastructural, standing in for transport systems, drug availability, and clinic capacity, which should normally not be dependent on research enrollment. Therefore, participation as a means of seeking resources is not merely why people join but is also part of the political economy that makes extraction governable. This is because access to blood is increasingly determined by negotiated care packages, cash payments, and recognition. In short, the "empty choice" is only part of the story; the other part is the emergent contract that converts scarcity into consent and consent into specimens—an "extractive exchange" whose legitimacy remains fragile and is the subject of public debate in the very communities on which it depends.

2.4.4. Embarrassment, Stigma, and the Moral Management of Being a "Research Subject"

In my interviews with Lassa study participants, embarrassment and stigma emerged as significant social consequences of participating in research, emphasizing the ongoing "blood-for-cash" debate within communities. To navigate this social cost, participants developed moral management techniques, such as narrating payment

without naming it as such. Phrases such as “they also gave us small things” or “they used to compensate us” perform a moral function: they preserve dignity, resist the idea of commodifying one’s body, and manage social blame. This is not merely a linguistic preference, but a form of relational work, as defined by Zelizer (2005), whereby people actively shape the meaning of monetary transfers so that money does not pollute valued social ties or moral personhood. In other words, “small things” is not a neutral euphemism; it is a boundary marker that attempts to keep the exchange within the respectable category of gift-giving or assistance, even when everyone knows that cash has changed hands. In Goffman’s (2003) terms, this is “face-work” in situations of potential stigma: participants anticipate being perceived as blood sellers, so they manage their self-presentation by insisting on “compensation,” not “sale,” and “help,” not “business.”

The moral stakes are intensified precisely because blood is not experienced as a detachable substance, but as a symbol of vitality and kinship. Therefore, to “take money” for it can be redefined as trading away life force or relational substance. Hence the reason why the narrative grammar is important: it aims to reframe cash as a token representing time, inconvenience, transport, or medicine costs, which can be acknowledged without implying bodily commodification. The subtlety here is that participants are not denying the transaction; they are disputing what kind of transaction it is and what kind of person it makes them. This disputing is a social strategy for maintaining a sense of purity in a moral landscape where the same act—giving blood—can be interpreted as a civic contribution, a desperate coping mechanism, or an occultly dangerous compromise, depending on who is speaking and which histories of extraction are being invoked (White 2000). It also demonstrates that the exchange not only structures relations between

researchers and participants but also restructures relations within the community by creating new moral hierarchies.

Non-participants explicitly framed participants as people who "minded the money business" and gave blood "without knowing what was going to be done with it," and these accusations matter because they create a stigma: suspicion is attached to the bodies and reputations of participants, as well as the research team. In this local moral economy, refusal can be presented as an act of autonomy and virtue—"I can work and earn $5; I don't want that kind of money"—while acceptance must be presented as an act of responsibility, care-seeking, or altruism in order to avoid being downgraded to "blood seller." Fairhead and colleagues' (2006) work in the Gambia shows that, despite reading research participation through unequal exchange and expectations of benefit, people still worry about what is being taken and where it travels. Participation becomes an arena in which value and vulnerability are continuously negotiated.

My Liberian account adds a specific social dimension: since payment is well known, the issue is not whether money exists, but how to cope with its implications in everyday relationships—at the water pumps, in coffee shops, in churches, in kin networks—where reputations circulate. Geissler's (2013) concept of "public secrets" clarifies this uneasy balance: people may widely recognize that blood and data enter opaque circuits of value yet choose to participate because other routes to care and cash are limited. The "secret" is not ignorance, but the social necessity of not making certain knowledge too explicit, accusatory, or disruptive to coexistence. Embarrassment, then, is not an incidental affect; it is a diagnostic sign that participation comes at a social cost, requiring ongoing repair work to prevent the exchange from contaminating one's

reputation. This is why community acceptance cannot be treated as a simple outcome of engagement: acceptance is uneven, contested, and socially risky, and it produces fractures that participants must continuously manage through careful speech and selective disclosure.

As embarrassment and stigma become central to the debate, rumor and refusal appear less as obstacles to be overcome and more as critiques of inequality and opacity. The "doctors and vampires" literature demonstrates that blood taking in clinical research can trigger fear of "blood stealing" or "blood selling," not because communities fail to understand biomedicine, but because extraction is experienced within a context of historical exploitation and present-day conditions where institutional trust is fragile (Grietens et al. 2014). Similarly, White's (2000) historical analysis of vampire rumors demonstrates that such idioms often function as social theory, narrating how bodies become resources for others and how value can be produced through hidden infrastructures that do not return proportional benefit. Here, cash payment exacerbates the ambiguity by creating a visible signal that blood has value beyond the village, while the ultimate destination of that value remains largely unseen. In other words, money can appear to be proof that something larger is happening. Bioethical debates about payment, which are often framed around "undue influence," only partially capture what I observed. The central problem is not simply that money might entice participation; it is also that money can recode participation in ways that generate stigma, conflict, and moral injury (Grady 2005).

In this context, the phrasal techniques employed by participants aim to dilute this moral injury and stigma induced by the payment they received for participating in the

study. For example, a participant who says, “they’d give you money to get medicine,” is attempting to perform an ethical repair by converting cash into care. However, this conversion remains socially contestable and can be easily reversed by critics into “you sold your blood.” The key analytical point I want to make here is that payment is not just an add-on incentive, but a socially dangerous sign that participants must domesticate through careful language. Meanwhile, non-participants use it to police dignity, autonomy, and the legitimacy of extraction. From this point of view, a more precise question than “Why did people participate?” can be asked: namely, how does an extractive exchange become governable through moral management, and what kinds of social damage (such as shame, blame, and suspicion) are displaced onto participants so that biomedical access can proceed?

2.4.5. Beyond Compensation: Vaccine Expectations in the Lassa Belt

Moving beyond the compensation rhetoric, both community members and health professionals, concerned by the burden of the disease in their localities, expressed their wish to see one day that research has come out with a vaccine against Lassa fever. Toward the end of an interview with a survivor, for instance, he expressed this expectation as follows: “I encourage you to continue the study to find good medication for it, maybe the vaccine to put in children’s hands; like the polio vaccine, they can find some for Lassa too.” Another survivor praised the research work on the ground by reporting that project workers were doing great work to “kick Lassa out of the place,” and by underlining that “there will be a vaccine and we will have it.” Similarly, a health professional from the county health team once told me that “The community would be happy to see an effective Lassa fever vaccine, that would be helpful.”

Analytically, these utterances cannot be reduced to “hope” as a general affect. Instead, they constitute specific moral claims regarding what would count as a “fair return” for living in a zone that is repeatedly made available for sampling, surveillance, and research attention. The analogy to the polio vaccine serves to anchor Lassa futures within a well-established public health paradigm, whereby vaccines are regarded as a standardized, routine object that can be put “in children’s hands,” rather than as mere experimental products or emergency measures. This analogy also implicitly reframes the temporal ethics of the study: blood draws and follow-up visits become tolerable when they can be narrated as steps on a path toward durable protection, which would shift the community from being a site of extraction to being a site of prevention. At this point, expectations beyond immediate compensation become pivotal as the discourse surrounding vaccines portrays a collective good that surpasses individual monetary rewards and immediate clinical monitoring. They reorient research participation within a framework of public benefit rather than individual economic calculus. From a promissory standpoint, the vaccine constitutes the most efficacious return imaginable, as it would substantively disrupt the condition of the belt itself, thereby rendering the place, at least in principle, less suitable for perpetual resampling.

In the context of a research project’s implementation, however, it remains unclear whether these vaccine expectations were created or amplified by the project fieldworkers during communication in their daily recruitment activities, in order to encourage participation in these communities. The pivotal observation is that expectations do not require implantation to be influenced by field encounters. Instead, they can be coproduced through everyday discourse, in which staff translate complex processes into locally understandable outcomes, and communities translate the presence of

researchers into anticipated results. Here, prevention-trial ethics offers a particularly apposite framework for consideration. Simon and colleagues (2007) propose the concept of "preventive misconception," defined as a misunderstanding in which participants overestimate the personal protection they receive simply by being enrolled in prevention research.

The present material does not constitute a vaccine trial per se, but the logic travels: when people infer that "the goal of the project was to bring vaccine," research participation becomes morally legible as early entry into future protection. Consequently, the line between study aims (knowledge, surveillance, seroprevalence) and downstream products (vaccines) becomes blurred. This blurring is not merely a cognitive error, but also an ethical and political response to scarcity. The promise of a vaccine can seem like the only way out of a "never-ending outbreak," particularly in places where routine care is fragile and the "belt" label normalizes perpetual vulnerability. In such settings, promissory statements can serve a double purpose: they can communicate a long-term rationale for research, but they can also function as a recruitment technique, stabilizing participation by projecting a future collective benefit that compensates for present extraction and uncertainty. Therefore, vaccine expectations become part of the broader "exchange" architecture: not only "blood for cash," but also "blood for hope," "blood for a future," and "blood for belonging to the promised beneficiaries of biomedical progress."

At the same time, expectations surrounding Lassa vaccines in Bong County are not mere fantasy; they sit within a real global pipeline in which Lassa vaccines have been prioritized. The WHO has produced a *Target Product Profile* (TPP) for Lassa vaccines

under the R&D Blueprint framework, articulating the desired characteristics of a Lassa vaccine for both preventive and outbreak scenarios, and providing a shared product horizon for developers and funders (WHO 2017). CEPI, one of the major funders in this area, which also funded the Lassa study in Bong County, reports investment in multiple Lassa vaccine candidates, some of which are in clinical development and have reached Phases 1 and 2 (CEPI n.d). This empirical reality helps to explain why vaccine discussions can be both well founded and risky. They are well founded because there is a real infrastructure of funders, trials and product profiles in place, but they are also risky because the existence of a pipeline does not guarantee local access, timelines, affordability, or prioritization of the communities that supplied the specimens and data.

When observed from the perspective of the belt, a vaccine becomes the imagined resolution of multiple asymmetries concurrently, including risk, extraction, opacity and unequal benefit. Consequently, vaccine expectation could be analyzed as an ethical demand rather than merely an optimistic belief. The transition to the concept of “blood for cash” is accentuated when vaccine discourse is regarded as the premium segment of the exchange paradigm in which monetary compensation is immediate and individual, while vaccine distribution is delayed and collective in nature. Both of these elements can be mobilized by participants and field teams to instill a sense of significance in the extraction process. In this theoretical framework, the fundamental question is not merely whether fieldworkers “created” expectations, but rather how promissory futures become integrated into the local moral economy, leading to the social acceptance of repeated bleeding for some and the moral condemnation of the same behavior for others.

2.4.6. Refusal to Be a Research Subject

As we know from biomedical research, the accumulation and spread of rumors ultimately lead to refusal to participate in proposed studies, and Bong County was no exception. During interviews in the communities, refusal emerged as a means of questioning the transparency of the Lassa study, as illustrated by the following quote: "Since I was born on planet Earth, I didn't see people going around community taking blood; I only know that in hospital, people can always give blood.... But now, it was surprising to me seeing people in the community saying that they're taking blood. So, whenever you give blood, then they give you US$5. Then they didn't explain to us how this blood was going to be tested; and after this blood being tested, they were not going to come back again to tell you the problem you got...." The power of this quote lies in how it frames refusal not as superstition, but as a demand for procedural coherence: blood belongs in hospitals, blood should be tested, and results should be communicated, and monetary compensation cannot substitute for this procedural chain. The informant's reasoning is consistent with biomedical logic and highlights a point often overlooked in trial narratives: the ethics of sampling is inseparable from the ethics of information flow, including where blood goes, what is done to it, and what comes back to the individuals from whom it was taken.

In this sense, refusal may be regarded as constituting an "emic ethics review." It identifies the site of blood taking (community rather than hospital), the incentive (US$5), the missing procedural explanation (testing and handling), and the missing reciprocity (results and follow-up communication). It may also be regarded as judging the assemblage as illegitimate. Such refusals resonate with broader findings in the domain

of global health ethics, where distrust flourishes when informed consent is perceived as a scripted event rather than as a dynamic process of ongoing elucidation (Hyder et al. 2004; Kass, Maman, and Atkinson 2005). Community engagement scholarship similarly emphasizes that engagement cannot be reduced to sensitization because trust is built (or fractured) through responsiveness to concerns about benefit, harm, and transparency—including concerns about what happens after samples leave the village (Tindana et al. 2007). From an analytical perspective, the concept of "blood for cash" can be interpreted as both a critique and a description. The utilization of monetary incentives has the potential to facilitate access, yet it can also be perceived as a method of circumventing procedural accountability requirements, thereby rendering explanations optional once participation has been secured.

Conversely, the quote should not be regarded as a straightforward empirical assertion that "no explanations were provided," given that refusals frequently emanate from the periphery of participation and, consequently, from the periphery of communication. The informant's statement may be influenced by the fact that he did not enroll, and non-enrollment can indicate non-exposure to the project's full consent conversation, particularly in designs where communication is concentrated at the moment of enrollment and follow-up is structured around the cohort. However, refusal may also suggest a community-level expectation that research should leave behind communicable traces, rather than merely extractive residues. The return of research results, whether individual or aggregate, is of significant ethical and practical importance, even though it is often disregarded as a peripheral aspect of research, particularly due to concerns regarding misunderstanding, cost, and legal and clinical responsibility (Shalowitz and Miller 2008).

It is important to note that the informant is not demanding a complex laboratory report; rather, he is requesting acknowledgment in the form of feedback that clarifies the chain of extraction. In essence, the concept of "results return" is not merely a biomedical add-on, but rather a social technology of accountability that has the capacity to influence trust and future willingness to participate, particularly in contexts where projects recur and where "belt" status already suggests ongoing sampling eligibility. The refusal, therefore, can be considered less a claim that the project failed entirely, and more a diagnostic indicator that the community's threshold for legitimate extraction includes intelligible closure. It can be argued that closure is precisely what is most likely to be missing when research is organized as itinerant visits rather than as durable clinical relations. When interpreted in this manner, refusal does not signify an absence of engagement but rather highlights the limitations of engagement as a form of communication. It suggests that engagement as reciprocity represents a more demanding and locally comprehensible ethical framework.

Despite the longitudinal design of the Lassa study suggesting more frequent contact between research subjects and research teams and therefore more communication within the community, complaints arose about a lack of information about the study. This observation is a reminder that "communication" does not necessarily equate to "comprehension", and that longitudinal contact does not automatically result in shared understanding. A follow-up study involving repeated blood draws at six-monthly intervals over a period of eighteen months does require tracking, contact, and symptom monitoring, meaning that some form of interaction was likely to have existed. However, ethnographic and bioethics literature repeatedly shows that information can be delivered and still not be received as meaningful, especially when it

is filtered through hierarchies of authority, time pressure, vernacular translation, and the everyday distractions of livelihood insecurity. Furthermore, even when teams share "all necessary information," participants may experience a structural nonreturn of results if the only information received is operational (e.g., when to come, where to attend, what to sign) rather than interpretive (e.g., what the test means, what the category implies, what action follows) (Shalowitz and Miller 2008). This issue is particularly pertinent for seroprevalence studies because antibody results have a complex semantic status: seropositivity indicates past exposure without current illness or clear clinical intervention, making "return" ethically desirable yet communicatively precarious.

Analogies can be drawn from the literature on returning results and incidental findings in genomics, which shows how "actionability" and interpretive uncertainty often lead researchers to prefer aggregate feedback or carefully bounded individual disclosure, rather than open-ended individual return, particularly in low-resource settings (Wonkam and de Vries 2020). A similar logic can be applied to Lassa serology: providing results without robust counseling can generate fear, misinterpretation ("I have Lassa now"), or social harm, particularly in contexts where the disease is already stigmatized as a "quick killer" and "belt" labeling can exacerbate suspicion. However, withholding results entirely can reproduce the very asymmetry that fuels refusal because it suggests that blood is taken but information is not provided. Therefore, not returning results is not simply a failure, but an ethical dilemma produced by the collision of scientific ambiguity, stigma risk, and community expectations of reciprocity — an ethical dilemma that refusal makes visible by turning "results return" into a condition of legitimacy.

Finally, it is important to acknowledge that refusal is grounded in social and historical factors. Ethnographies of rumor and refusal demonstrate that individuals do not simply adhere to beliefs in a vacuum. Rather, they employ diverse interpretive repertoires, at times incorporating occult idioms and procedural critiques, to safeguard themselves against opaque extraction and to assert their right to comprehend what is being done with their bodies (White 2000; Grietens et al. 2014). In this particular instance, what might appear to be obstinacy could be interpreted as a reluctance to acknowledge a transformation of bodily substance into biomedical value without the provision of suitable terms of return. These terms encompass not only financial and care-related aspects, but also the provision of a comprehensible explanation and safeguarding of reputation. Thus, refusal points to the boundary at which the vernacular contract of "blood for cash" ceases to be a viable vernacular contract and becomes morally untenable due to its disproportionate informational asymmetries. It also shows that the analysis of compensation cannot be conducted in isolation from the concept of transparency. The allocation of financial resources may secure the facilitation of the needle's entry, yet it concomitantly gives rise to the questions of what the blood is for, where it goes, and whether the participants are being recognized as partners or treated as subjects. Refusals can then be regarded as being integral to the research economy rather than external to it, as they pressure teams to renegotiate consent practices, disclosure strategies, and compensation packages, and therefore shape the practical conditions under which research access is achieved in the "belt." The analytical payoff is that refusal becomes not an interruption of the exchange but a commentary on its terms, a critique that forces the exchange to reveal itself as exchange.

2.5. Blood's Social Life: Kinship, Vitality, Occult Value Rumor

In an interview, an informant vehemently criticized the blood collection practice in his community, describing it as dubious and secretive. He explained: "People will come to you, they plead to you, at the end of the day, when they go, different things come. So, people said that the blood they're taking, they're carrying it in the dark world.... Even my older sister, the first blood she gave, they gave her US$5. It took time before they came back again for another check-up, after which they gave her US$5; but now, go and see my sister; her face, all swollen; her feet, all swollen. This morning, I'm just from there, you see? So, sometimes, if you sit down and think carefully..., you know.... $5, it is money, it's big but for me, I can look for $5 today and I get it. So, I looked at it, I said I'm not part of it, because it was not profitable to me." In this account, we see how the informant tries to link persuasion, payment, and bodily misfortune into a single explanatory chain. In this chain, "pleading" is not merely a recruitment technique, but a morally charged attempt to draw someone into an encounter whose consequences may arise at a later time. According to the speaker, the delay between the initial draw and the next one creates an opportunity for causality to intensify: the harm is not immediate, but can manifest over time as swelling, fatigue, or other visible symptoms that render the invisible tangible. This temporality is important because it aligns neatly with the common perception of blood as a finite resource—something you "have," something you "keep," and something that can be depleted or diverted, with consequences that may emerge later.

In Geissler's (2005) ethnographic account from Kenya, blood is not only a bodily fluid, but also a social and moral symbol tied to personhood, which gives its extraction a deeper significance, as it touches upon what a body is for and with others. Leach and

Fairhead (2012) further underline that blood can signify vitality and strength, hence its removal can be interpreted as a sign of weakening, loss, and vulnerability, particularly when people are already living close to the edge of bodily and economic precarity. Ferme's (2001) focus on how material substances carry sedimented histories clarifies why a few milliliters can appear "clinically small" yet "morally immense," as bodily materials are never merely present-tense matter; they can also be haunted by memories of exploitation, coercion, and extraction that extend beyond the moment of the needle. Interpreted in this way, the sister's swollen face is not merely evidence in a biomedical sense, but rather a social sign around which competing causal narratives can form, particularly when the research encounter has already been framed as transactional and occult. If blood simultaneously represents vitality, relationships, and history, paying cash for it not only compensates for time, but also risks reducing multiple layers of meaning to the simple act of purchase, which invites suspicion about what exactly is being acquired.

What the quote also reveals is a vernacular arithmetic of value that cannot be reduced to "belief" versus "science," because the speaker explicitly weighs the money against alternative ways of earning it, yet still refuses. This refusal hinges on profitability, but here, profitability is as much moral as economic: US$5 is "big" in one sense (because it can buy food or medicine), yet "not profitable" in another (because blood is considered too precious, too risky, and too easily misused). This interpretive volatility is precisely what is documented in trial ethnographies, where blood becomes the pivot of rumor because the act of taking blood can simultaneously be framed as care, theft, sacrifice, or predation, depending on how institutional opacity is perceived and how histories of extraction are remembered (Grietens et al. 2014). Fairhead, Leach, and Small's (2006) analysis of the "economy of blood" in the Gambia reveals that participation is shaped by

a continual balancing of danger and benefit. Here, biomedical institutions can appear as both providers and extractors, and local evaluations are calibrated through lived experience of scarcity and unequal exchange.

My informant's emphasis that "people will come to you, they plead to you" is telling, as pleading is a social technique that presupposes an asymmetry: the one who pleads needs something but cannot fully disclose the downstream destinations or uses of what is being requested. When payment is repeated—first draw, then later draw, each time with an envelope—the repetition can naturalize the exchange as a routine, yet also intensify suspicion by suggesting that the blood has continuing value elsewhere, a value that outlives the visit. The swelling body then becomes a retrospective lens through which the routine is reinterpreted as harmful, and this harm is seen as proof that blood did not simply become a specimen but traveled into a realm beyond legitimate medicine—the "dark world." Importantly, this does not require a stable, shared ontology of occult causality; only a plausible account of asymmetry is needed, one that explains why outsiders want blood, how they can offer something in return, and why the benefits received in return appear small compared to what is given.

2.5.1. Blood's Destination: The "Dark World" Rumor vs. Biomedical Specimen

From a scientific perspective, blood is considered a biomedical specimen and is therefore destined for analysis in laboratories. However, community members who doubted the intentions of researchers reported that blood could be misused and taken to a "dark world," which could result in harm to the person being sampled, as shown in the quote above. The idiom of "dark world" is analytically generative as it describes a moral landscape of visibility and concealment at the heart of extractive encounters:

blood is taken in public, but its destinations and transformations remain hidden, and it is precisely this hiddenness that gives rise to rumor. Comaroff and Comaroff's (1999) concept of "occult economies" is enlightening here because it treats occult idioms not as irrational residues, but as political commentary on systems in which wealth appears to be generated through hidden extractions and violent abstractions—processes that ordinary people cannot audit, yet must live with. White's (2000) historical work on "vampire" rumors further demonstrates that such discourse has long served as a social theory of extraction under colonial and postcolonial conditions, a means of rendering graspable the unsettling fact that bodies could be made to generate value for others through opaque institutions that demanded trust.

In this longer genealogy, rumors are not only about blood; they are also about the moral issue of circulation—who moves, who controls movement, who benefits from it, and who is left depleted or at risk. This is where Geissler's (2013) concept of "public secrets" becomes relevant: in many African research sites, inequalities are widely recognized yet tactically not spoken of in order to maintain functional relationships, and the unspoken becomes part of what sustains the research enterprise. "Dark world" talk can be seen as a moment when this tacit agreement is spoken about, when the hidden nature of value chains becomes the subject of criticism itself. The informant's narrative is not merely an accusation that researchers are witches, but rather a claim that something significant is occurring beyond the scope of consent and that the community's limited visibility into this realm is a result of structural factors. In my analytical framework, while "belt talk" presents the place as dangerous and therefore eligible for intervention, "dark world talk" provides a counterpoint by insisting that

intervention itself can be seen as dangerous when substances are removed from the community without accountable return.

In order to explore the implications of these concepts in relation to biomedical specimens, it is helpful to highlight the technical process that fundamentally alters the moral universe: once blood enters the tube, it becomes divisible, storable, transportable, and capable of generating analytical insights, which detaches it from the individual even though it remains their material property. Waldby's (2002) concept of "biovalue" captures how biological materials become sources of value through their capacity to be worked on, standardized, and made to yield knowledge or products. This transformation is both scientific and economic, even when it is narrated as purely clinical. Furthermore, Waldby and Mitchell's (2006) account of "tissue economies" clarifies the ethical tension that follows: modern biomedicine often relies on an unstable oscillation between gift and commodity, donation and exchange, where official languages of altruism coexist with infrastructures that generate value from human materials over time and space. Cooper and Waldby's (2014) concept of "clinical labor" further emphasizes this point by demonstrating how participation can be viewed as productive labor that generates value for research systems, while participants receive returns that are immediate, limited, and often deliberately framed as "compensation" rather than "payment" to avoid the stigma of sale.

In that light, my informant's refusal—"not profitable to me"—is not merely a personal stance; it is a critique of the conversion rate between the social and research value of blood, and between the vital substance that leaves and the cash that returns. It also demonstrates why the exchange cannot be stabilized by money alone: while money

may secure access, it can also highlight the question of where the blood goes, what it becomes and who ultimately profits from its mobility. If the sister's swelling is read as an embodied warning, then "blood for cash" is not just a vernacular description of research compensation, but a contested moral contract whose legitimacy depends on communities' ability to reconcile the relational meaning of blood with its transformation into a specimen that bears biovalue. This reconciliation is never guaranteed, and its failure is precisely why refusals, rumors, and accusations become part of the research encounter rather than just background noise to it.

2.5.2. Blood Beyond Research: Transfusion, Commodification, and Everyday Suspicion

On one occasion, while sitting under a tree outside Phebe Hospital, I noticed a group of three young men, probably in their late twenties or early thirties seated nearby, engaged in conversation. They appeared to have come to visit someone in the hospital but were waiting outside for visiting hours to begin. During their conversation, which I overheard but was not part of, they debated the financial aspects of blood donation for transfusion. One mentioned that he had been asked by a lab technician to donate blood to help a patient, but he refused, as he believed that the technician would sell his blood for profit. Another concurred, expressing a preference to donate directly at the blood bank and receive payment for it. This observation widens the analytic frame in a crucial way, showing that "blood for cash" was not created by the Lassa study in Bong County, but is situated within an existing local blood economy. When a lab technician is accused of selling blood and potential donors discuss preferring to donate at a blood bank in exchange for payment, it appears clear that the cash value of blood is already part of the

local moral discourse. Fairhead and colleagues (2006) observed similar dynamics in the Gambia, where the "high cash value" of blood in transfusion circuits generated accusations and anxieties that spilled over into interpretations of research blood taking. The Liberian case is particularly interesting because it shows how young men, who are often believed to be "stronger and healthier" and therefore eligible donors, view blood as both a substance and a commodity, and how suspicion is directed not only at foreign researchers, but also at local biomedical intermediaries.

A comparison of the maximum volume of blood taken from a Lassa study participant (10 milliliters) and that taken from a blood donor for transfusion (450 milliliters) highlights a significant difference in the quantity of blood taken in the two procedures. The difference between 5 milliliters for sampling and 400 milliliters for transfusion suggests that participants may view research participation as an easy way to convert bodily reserves into short-term returns, especially when these returns include cash and potential healthcare. The considerable number of young men among my informants who reported having taken part in the study and given blood might be evidence of this calculative logic. This account aligns with the logic of clinical labor, whereby bodies become sites of value extraction and people learn to navigate this process by comparing risks, volumes, and benefits (Cooper and Waldby 2014). However, this same logic raises an ethical question that non-participants continue to ask: if blood can generate profit in transfusion systems, then research blood may be even more valuable, meaning that the small envelope could signify under-compensation rather than fairness. This is precisely how extractive exchange becomes a field of critique: it is not that people misunderstand value, but rather that they understand all too well that value travels. Therefore, the chapter argues that the Lassa study did not merely introduce

money into research but rather activated and intensified an existing political economy of blood, in which accusations of sale, theft, and exploitation are valid ways of discussing institutional opacity.

2.6. Extractive Exchange as Political Economy of Preparedness

Bringing the ideas discussed in this chapter together, “blood for cash” can be framed as a locally enacted contract that binds together endemicity, poverty, and global health preparedness. As I argued earlier, the “Lassa belt” label operates as a spatial category that identifies the area as a site of risk, and therefore a legible site where repeated research is justified. Once this justification takes shape, the practical problem becomes access: how to enter households, map bodies, and puncture veins without triggering refusal, rumor, or hostility. To fix this practical problem, cash thus intervenes as a tool of access. In doing so, however, cash also functions as an object of interpretation that can inflame the very suspicions it is intended to alleviate. This is why in this chapter I resist treating cash as either a purely ethical problem or a purely pragmatic solution; I rather treat it as both, because its duality is what makes it analytically revealing. In this sense, extractive exchange is not merely a metaphor borrowed from resource extraction, but an ethnographic description of how biomedical value is produced through asymmetrical circulation networks. Blood travels outwards to laboratories, datasets, and publications, and sometimes toward future diagnostics or vaccines, while benefits return in the form of envelopes, health messages, the occasional referral, and promises of follow-up and vaccines that may or may not be fulfilled.

The resulting landscape is one in which participation becomes a strategy for accessing resources, refusal becomes a demand for accountability, and rumor becomes

a language for highlighting the opacity of value flows (White 2000; Grietens et al. 2014). My ethnography, anchored in the brief interaction between Niuma and the woman, shows how these global circuits are lived as everyday encounters that begin with greetings and end with judgments. That is also why I want to end the chapter by presenting the vignette as more than anecdote: the woman's disappointment is a small-scale indicator of how research, once it has functioned as an income stream, becomes woven into livelihoods, and its departure becomes felt as loss. This loss is not merely economic, but also political because it suggests that the community's recognized status as a "belt" does not guarantee durable care, only intermittent extraction. In this sense, the "Lassa belt" can be viewed as an infrastructure of access for global health, while "blood for cash" can be seen as the fragile social technology through which this access is negotiated, contested, and sometimes refused.

2.7. Conclusion

This chapter has revealed how biomedical research had become socially recognizable around Phebe Hospital. This legibility was produced not only by information, but also by a local archive of repeated visits, blood tests, and compensation, which came together to form a recognizable pattern of encounters. By tracing the genealogy from the "meningitis belt" to the "Lassa belt," the chapter argued that "belt" is not a neutral descriptor, but rather a public health spatial category that organizes epidemiological knowledge while distributing attention, resources, and intervention. As a spatial form, the "belt" links distant locations into a strip of risk that becomes common sense, legitimizing the repeated presence of research and converting ecological uncertainty into cartographic certainty. However, the "belt" does not simply emerge from

above. Around Phebe, it is adopted into everyday speech and institutional practice, producing an “endemic place-making” through which residents and health workers explain why danger feels continuous, why outsiders keep arriving, and why research belongs there. In this way, the “belt” becomes an infrastructural category that makes research ethically and logistically plausible by turning extraction into a reasonable response to endemic risk.

The chapter shows that once “belt talk” becomes ordinary, it starts to perform an institutional role at the crucial point when researchers seek access to households to conduct mapping, bleeding, and testing. The belt can lower suspicion by functioning as a shared diagnosis—research appears to respond to what residents already know is killing people—thereby aligning moral purpose with research entry. At the same time, “belt talk” can normalize the idea that certain places are destined for research, quietly redistributing the burden of preparedness onto those who are most accessible for sampling. This ambivalence is illustrated by the concept of “blood for cash,” where compensation practices are analyzed not simply as incentives, but as a vernacular contract through which extraction is stabilized. Participation often took the form of seeking resources under conditions of scarcity: free health checks, follow-up care, and money to buy medicine were experienced as valuable benefits in settings where routine healthcare is unreliable. It is here that the “empty choice” matters: consent may appear formally voluntary, but is practically shaped by constrained options, effectively making research a pathway to care. This chapter therefore treats participation as pragmatic navigation within unequal infrastructures, rather than as irrationality or simple coercion.

Yet exchange is never socially neutral. We see through this chapter that when money is attached to blood, it reshapes community moral hierarchies and sparks internal contestation over dignity, responsibility, and vulnerability. Participants often referred to payment in euphemistic terms, speaking of "small things" or "compensation" in order to preserve their respectability and resist the stigma of commodifying the body. Such euphemisms were not trivial; they represented a form of moral management in response to accusations from non-participants who portrayed participants as people who "minded the money business" and gave blood without knowing its destination. Embarrassment, in this sense, became analytically productive in that it revealed money to be a socially dangerous sign that enables participation while simultaneously exposing participants to blame. Expectations surrounding vaccines extended the horizon of promises beyond immediate compensation, with participants and health workers imagining Lassa vaccination through familiar models of routine childhood protection ("like polio"). Here, this hope considered to be both an ethical demand for a fair return and a potentially fragile promissory economy, particularly given that recruitment talk can blur the line between knowledge production and guaranteed future products.

The chapter situated rumor—blood's "dark world" destination—within blood's broader social life as a source of vitality, a substance of kinship, and a potential source of occult value. At the same time, it tracked its transformation into a biomedical specimen and a source of biovalue. "Vampire" discourse and everyday suspicion were interpreted as vernacular critiques of opacity and unequal circulation: blood leaves communities, the benefits are uncertain or delayed, and communities cannot audit what blood becomes. This critique is reinforced by blood economies beyond research, including transfusion circuits, accusations of selling, and everyday debates about who

profits from bodily materials. The chapter's central conclusion is that biomedical research in the Lassa belt operates as an extractive exchange within a political economy of preparedness: endemic place-making produces eligibility, eligibility produces access, access produces specimens, and specimens generate future-oriented value. Communities negotiate this chain through contracts, stigma management, rumor, hope, and refusal. What is at stake is not only the scientific value of research, but the distribution of preparedness burdens and benefits across places already deemed dangerous, as well as the demand from within the belt for reciprocity that outlasts projects, explanations that travel back, and futures that do not leave the same communities permanently available for extraction.

Chapter 3

"Going In Is easy, Coming Out Is Hard...": The Ambivalence of Lassa Fever Survivors in Bong County's Viral Atmosphere in Liberia

3.1. Introduction

The concept of atmosphere has become an essential lens in contemporary social theory for grasping the collective and spatial dimensions of emotional life, moving well beyond models that locate emotion solely within individual psyches. Rather than treating feelings as private, subjective states, phenomenologists and affect theorists emphasize that emotions are spatially extended, situational, and fundamentally social. Emotions, from this perspective, are dynamically expressed and modulated within shared milieus, rendering the boundaries between inner and outer worlds porous and continuously negotiated (Eisenlohr 2024). German philosopher Hermann Schmitz describes emotions as *atmospheres poured out spatially*—"half-entities" that grip the felt body (*Leib*) and envelop those present in a situation (Schmitz, Müllan, and Slaby 2011). Building on Schmitz, Friedlind Riedel emphasizes the mereological quality of atmosphere: it describes how a multiplicity of bodies is integral to and anchored in a situation that encompasses them (Riedel 2019). In this sense, atmospheres tend to be contagious as they exert authority over all bodies in a given situation.

Extending these ideas, Tonino Griffero develops an "atmospherology" to depict atmospheres as the always-present affective "tunings" of space. According to Griffero, individuals do not project their private moods onto neutral backdrops, nor do they passively receive feelings as fixed environmental properties. Instead, they are immersed

in quasi things—affective influences that are situated between subject and object, continuously shaping and modulating lived experience. Such atmospheres are not merely aesthetic but fundamentally material, inflecting cognition, behavior, and social interaction in ways that resist reduction to any one body or mind (Griffero 2021, 2019, 2016).

In contemporary human geography and anthropology, atmospheres have been reconceptualized as an affective geography: a distributed, collectively experienced mood or field that intimately conditions how environments are felt, interpreted, and inhabited. Ben Anderson refers to them as "the shared ground from which subjective states and their attendant feelings and emotions emerge" (B. Anderson 2014). Seen this way, atmospheres are not ephemeral side effects of events but constitutive forces in social and political life. They define what it feels like to inhabit a space, determining orientations, possibilities for action, and forms of belonging or exclusion. Indeed, atmospheres can produce affective regulation; while certain bodies feel at home in them, others are rendered vulnerable or disoriented, or stopped in their tracks (Krueger 2021).

Recent scholarship has highlighted the political and historical stakes of atmosphere. Park (2025), revisiting Frantz Fanon, argues that epidemics generate felt disasters—atmospheres of mistrust, fear, and paralyzing terror that exceed individual experiences of violence and disease. However, he adds that these atmospheres are not only disabling; they also contain the possibility of felt changes—atmospheres of creativity, solidarity, and renewal when communities find new ways to dwell with or resist crises. Similarly, Schnegg (2025) shows how collective loneliness in postcolonial Namibia arises atmospherically, through absences of kin, livestock, or sounds—

"emotions of absence" (see Roberts and Krueger 2021) that link personal affect to structural histories of dispossession and drought. These insights underscore that atmospheres are historical formations, shaped by colonial legacies, political economy, and uneven distributions of precarity and hope.

To bring the atmospheric theory into the viral space, the Medical Anthropology Research Group at the Bernhard Nocht Institute for Tropical Medicine (BNITM) suggests using the concept of "viral atmospheres" to explore the atmosphere surrounding the COVID-19 pandemic and understand how it came to constitute a social crisis on a planetary scale. To this end, the research group uses this concept to reflect on how the pandemic affected us by exploring feelings as atmospheres (BNITM 2022). Building on this theoretical framework, I borrow the concept of *viral atmospheres* to analyze survivorship in areas of Bong County in Liberia where Lassa fever is endemic. Viral atmospheres are environments in which biological contagion intertwines with affective circulation, social perception, and collective memory. They are spaces where pathogens and emotions coproduce each other's significance: the virus becomes entangled with fear, stigma, and memory, while atmospheres of dread or hope influence how people navigate medical and social worlds in times of epidemics. In this sense, viral atmospheres extend beyond Anderson's (2014) concept of affective atmospheres by foregrounding the epidemiological and historical specificity of hemorrhagic fevers in West Africa.

It is within this conceptual framework that Amuchin and other Lassa fever survivors in Bong County described their experiences in the Phebe Hospital's isolation unit (IU), as well as their subsequent experiences in their respective communities after

they were discharged from hospital. Speaking in an emotional yet calm manner, Amuchin recounted that “Going in is easy, coming out is hard…,” referring to his admission to the IU following his Lassa fever diagnosis. For him, as for many other survivors, the IU was not merely a medical facility but an affectively charged environment, assimilated to a place of death, which I term here a “deathtrap.” Entering the ward meant crossing into an atmosphere thick with fear, stigma, and uncertainty. Outside, in endemic communities, survivors encountered a parallel but distinct viral atmosphere of suspicion and avoidance, and lingering memories of contagion that framed them as potential threats. Across both spaces—the IU as a deathtrap and the endemic community as a place of fear, stigma, and uncertainty—viral atmospheres shaped survivorship as a journey through felt disasters of exclusion and stigma, but also, at times, through felt changes of hope and reintegration.

This chapter thus offers an ethnographic account of the weight of Bong County’s viral atmospheres, tracing how illness, survival, and reintegration unfold across affectively charged spaces of the IU and the Lassa belt communities. By situating survivorship in Liberia within a theoretical framework of atmospheres, affective geographies, and Park’s notion of felt disasters/felt changes, this chapter contributes to broader efforts to understand epidemics not only as biological crises but also as emotional and spatial formations. It asks how fear, hope, and memory become contagious in their own right, shaping the lived experience of disease in an endemic zone.

3.2. Traveling to a Disease Hotspot: Emotional Self-Reflexivity in a Viral Atmosphere

Before presenting the ethnographic accounts of Lassa fever survivors and their relatives, I begin this chapter with my reflective account of conducting fieldwork in the "Lassa belt" of Bong County, one of the regions in Liberia most affected by Lassa fever, where Phebe Hospital is located. This public referral hospital is also home to the only dedicated Lassa fever treatment unit in the area, known locally as the Isolation Unit (IU). My account provides a compelling illustration of how researchers navigate and are influenced by what could be termed "viral atmospheres"—the spatially distributed, emotionally charged environments that emerge around infectious disease threats. It also demonstrates the complex interplay between personal vulnerability, professional duty, and the atmospheric weight that disease hotspots exert over those who enter them.

As my fieldwork approached, I had a lot on my mind, as I was going to travel to a region where one of the most dangerous hemorrhagic fever diseases was known to be endemic: Lassa fever. Before starting my fieldwork, my project team had taken a preliminary exploratory trip to Liberia in February 2023. Among other places, we visited Bong County, where I would soon be conducting my ethnographic research. While there, I spoke with people at Phebe Hospital and immediately realized the significant impact of Lassa fever in the region. "Last month alone [January], we lost two nurses," they told me when I asked about the disease's prevalence. From all my interactions with the people I met, it was clear that the hospital was receiving recurrent cases of Lassa fever from surrounding communities, which were in fact referred to as the "Lassa belt" of the region. Additionally, nosocomial infections were common due to the high contagiousness of

Lassa fever. The knowledge that I would later have to return to the communities of the Lassa belt and to this hospital for my fieldwork, where healthcare professionals were succumbing to the disease, already plunged me into an atmosphere of fear. In short, I felt the weight of the viral atmosphere beforehand.

The question that kept nagging at me was, *What if I contracted the virus and died?* My answer was short and consoling: *I would fall in battle, weapon in hand,* as is often said of people who die in the line of duty, such as soldiers in wartime or healthcare workers during epidemics. I tried hard not to think about the negative consequences that could result from my fieldwork journey in Bong County, but the omnipresent viral atmosphere in that region of Liberia haunted me with every article I read about it. On top of this, my medical training enabled me to assess the risks I would be taking in a hotspot of a highly infectious disease, and I chose to summon courage and go to the field anyway. A mix of hope and anxiety took place in my head, creating an emotional atmosphere in which I hovered before traveling to Bong County.

In August 2023, I arrived in Bong County to begin my fieldwork. Feeling both excited and wary, I calmly immersed myself in the viral atmosphere that I had read so much about and feared so much. My days were divided between the hospital and the surrounding Lassa belt communities, and my daily life became intertwined with those of the people who had lived and worked in the Lassa belt for decades. Armed with my basic medical knowledge of infection prevention measures, I approached people tactfully and cautiously, taking precautions and being careful not to draw attention to myself. In these viral atmospheres, I still had to behave like a "good ethnographer" in order to "rediscover ethnography's ethos of curiosity, flexibility and serendipity"—characteristics that make

ethnography a strong approach to studying complex phenomena such as epidemics (Eggeling 2023). This required me to blend into rural communities in order to be accepted and understand what it means to live in a viral atmosphere. The tension I describe here between ethnographic immersion and self-preservation reflects the work I undertook to regulate my emotions and adapt them to the local context's feeling rules (Couper 2024). This emotion work transformed my existential anxiety into professional courage, allowing me to continue working in the supposedly dangerous Lassa belt field site.

Over the months, the local context shaped my emotions, which were marked by heartbreaking stories of loved ones lost to the nightmarish disease that was Lassa fever. These stories reminded me how, in times of health crises, many researchers can be confronted with vulnerabilities (von Bose 2023). Caught between the fear of contracting the virus and the zeal of the curious ethnographer who must adapt to local realities, I moved from house to house. I met community leaders, mingled and watched football games with young men, talked to women, and discussed Lassa fever matters with survivors and the relatives of deceased patients. I listened attentively to their touching accounts, but also to those of other community members.

At Phebe Hospital, posters in the triage unit at the entrance read "PREVENT LASSA FEVER, IDENTIFY, ISOLATE & REFER ALL SUSPECTED CASES," conveying that one had arrived in a high-risk zone of the disease. I took some pictures of these posters with my smartphone, but I also committed the warning message to memory for good. I spoke to healthcare workers in different wards and listened to their experiences of the disease. Inside, the Lassa Isolation Unit (IU), located on the left edge of the main hospital building, was dimly lit; staff were rarely to be found at the nursing station. The emotional

atmosphere here blended anxiety with muted hope, a charged stillness only occasionally interrupted by nurses checking on patients or patients calling for help when there were some admitted ones. Stepping through the threshold, I sensed my body becoming part of this atmosphere. Donning full personal protective equipment (PPE), including a white gown, apron, and gloves and mask, my breath fogged my facial shield, narrowing my vision and heightening my other senses. The latex against my skin reminded me of the contagious nature of the environment, like an invisible virus that could spread through contact or airborne particles.

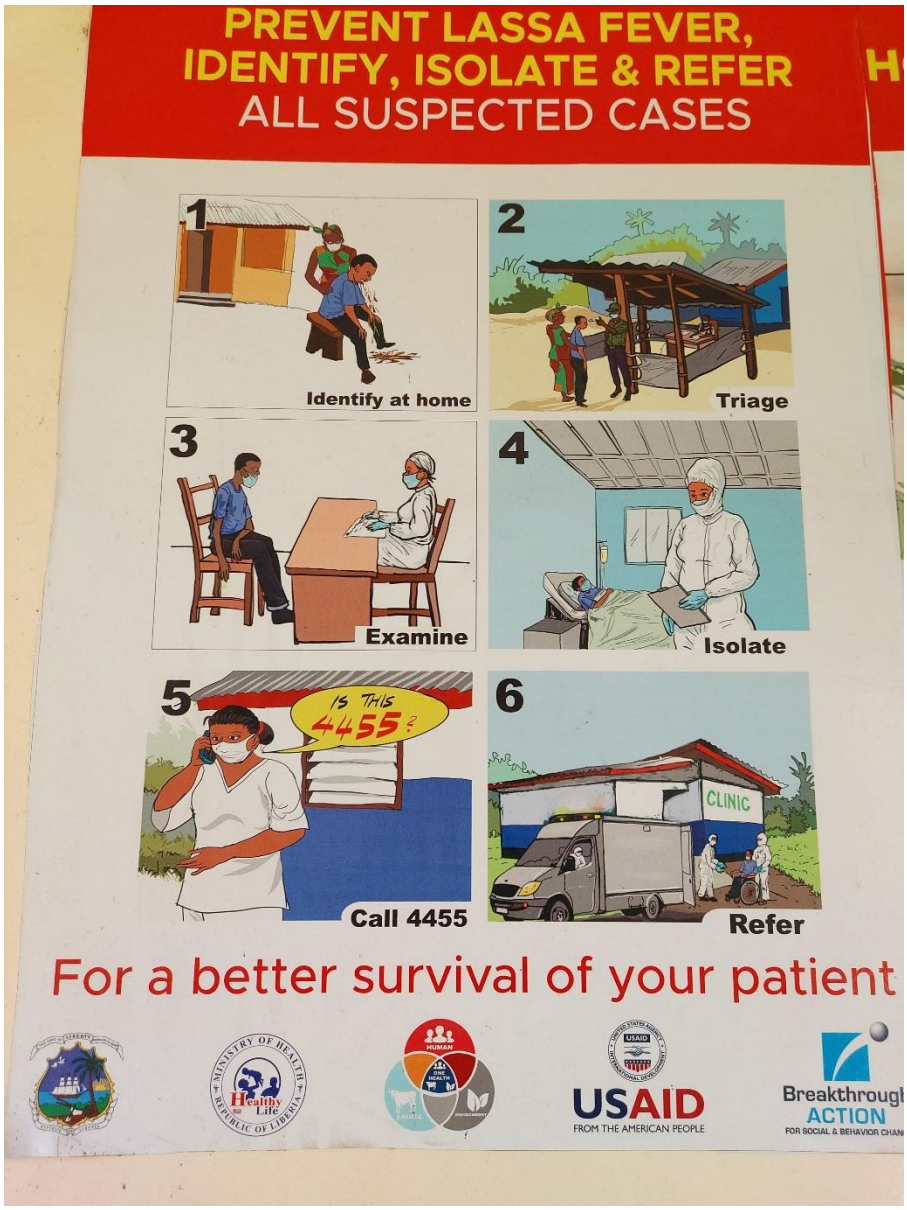

Figure 8: *Lassa fever poster in the triage unit, Phebe Hospital.*

These tactile sensations were not just background noise, but an integral part of my embodied research practice. Researchers working in hazardous environments must learn to manage their fear and bodily vulnerability. My heartbeat quickened as I approached a patient, yet I also felt a sense of duty to bear witness and make a record, that is, to "stay with the trouble" (Haraway 2010). In the IU, distance and protective gear mediated contact. I stood by the patient's bedside, separated from her by layers of latex and fear. Although my questions about the onset of fever, vomiting, and bleeding were clinical, the patient's whispered responses were punctuated by sighs and uncertainty. In parallel, the nurse took her temperature and checked her blood pressure, which he reported to be fine, gave her ribavirin tablets, and advised her to eat well and drink plenty of water. I then turned to her mother, who, despite not having Lassa fever, had been admitted to the IU to care for her daughter. I was shocked by seeing a caretaker in an IU as I knew that, for Lassa fever, as well as for other hemorrhagic fever diseases, only patients were supposed to be admitted to the treatment unit. At least, this is the standardized protocol for the treatment of High Consequence Infectious Diseases (HCIDs), but, as they say, necessity is the mother of invention. I will discuss this local adaptation of the treatment protocol of Lassa fever in my next chapter.

The healthy mother appeared confident as she watched her daughter recover from the killer virus. She did not seem bothered by her own exposure to the virus in the Lassa ward; rather, she was concerned for her daughter and wanted to be with her to witness the treatment process in a space rumored to be "haunted by demons." Indeed, she seemed more scared by the way the nurse and I were dressed up—"as if we were going onto the moon," as one survivor once described the PPE—than by the virus itself. I guessed it must have been confusing for her to see us so heavily protected just to enter a

space in which she would have to stay for at least ten days (the duration of the ribavirin regimen for Lassa patients). Any concerns I had about her health were quickly dispelled when she told me that she was feeling very well and had not experienced any symptoms of Lassa fever.

After around twenty minutes of interactions, treatment, and sweating in the layered latex PPE, we followed the exit route out of the IU. Treatment centers for HCIDs have specific one-way circuits for entering and exiting, with no U-turns permitted, in order to limit the spread of invisible malicious agents. At the exit, a hygienist stood with a sprayer containing a chlorine solution strapped to his back. He is responsible for thoroughly spraying the used PPE and presumably killing any virus picked up from the patient in the IU during treatment, thereby protecting staff who enter the IU. Undressing is therefore very sensitive and meticulous; an error can be costly as it can lead to a boom of nosocomial infections. This preoccupation dominated my thoughts and plunged me into an atmosphere of fear. I carefully followed the nurse's and hygienist's instructions, removing the PPE one element at a time and spraying it with chlorine at each step.

For weeks afterward, I lived with this fear, monitoring myself for any fever, wondering if I had contracted the virus in the heart of the viral atmosphere. I counted the days, impatiently waiting for the twenty-one-day incubation period for Lassa fever to pass, as I knew from the medical literature. My fear was reinforced by the fact that it was my first time donning PPE, entering a treatment center, and having direct contact with a Lassa patient. My emotions were torn between fear of the disease and pride at having experienced what nurses and patients endure in this scary space.

Outside the hospital, I visited survivors in their homes, where the atmosphere was warmer and more intimate. We talked about their memories of the IU, such as the fear of being alone in a "cursed and haunted space," the treatment they received, and the humiliation of being a "Lassa patient." These emotional encounters were situated not only geographically, but also temporally: the narrators moved between past terror and present gratitude, and between the viral atmosphere of the IU and the communal atmosphere of home. As an outsider with knowledge of virology and anthropology, I felt the tension between wanting to provide comfort and needing to make observations. My empathy sometimes blurred with guilt when I recognized my cautious attitude. Such moments demanded emotional reflexivity: the practice of acknowledging and analyzing one's own emotional responses as part of the research process. As Andrea Ploder argues, strong reflexivity requires researchers to use their sympathies, prejudices, fears and personal experiences as sources of knowledge rather than obstacles (Ploder 2022). By paying attention to these resonances, I came to understand that stigma adheres not only to patients, but also to spaces and bodies associated with disease.

The different felt spaces that I moved through—from the affected communities to the hospital, and finally to the IU where patients were admitted—influenced my emotions as I submitted to the authority that Bong County's viral atmosphere exerted over me, thus shaping my feelings about the situation in which I found myself. Recent scholarship on "emotional fieldwork" in critical research contexts offers a valuable theoretical framework for understanding my experience across these viral atmospheres. Woon (2013), for example, argues that emotions in fieldwork should not be viewed as mere obstacles to be overcome, but rather as integral to understanding how research sites affect and are affected by researchers. Similarly, Punch (2012) contends that guilt,

apprehension, fear, and worry are legitimate, common, and even useful experiences during fieldwork, challenging traditional expectations of emotional detachment in research.

In Bong County's viral atmosphere, my fears, hopes, and bodily sensations were not just personal experiences, but also part of the data. Recording these experiences helped me understand how emotions spread. My anxiety about becoming infected mirrored patients' fear of dying. Emotions acted as bridges, enabling me to empathize. However, they also acted as barriers when fear caused me to withdraw. Fieldwork in such an environment revealed the interplay between bodily vulnerability, emotional landscapes, and the ethics of ethnography. As we will see in my informants' accounts further on, the Lassa belt of Bong County is not only a geographic region, but also an assemblage of viral particles, rodents, protective gear, rumors, emotions, and prayers.

Figure 9: *Me in the isolation unit with a nurse and a Lassa patient in the IU, Phebe Hospital (photo by Mark Sumo).*

3.3. Life in Bong County's Viral Atmospheres

Amuchin, a quiet young man, seemingly in his mid-thirties, moved to Bong County to study nursing. He had traveled with other friends from his hometown to Suakoko District where Phebe Hospital and the School of Nursing are located, to pursue his goal of becoming a nurse. As a group, Amuchin and his friends moved into a residential apartment building on the hospital compound, eager to begin their training. Their neighbors were a married couple of health professionals—a physician assistant and a nurse—who worked at Phebe Hospital. As their next-door neighbors, this family facilitated their integration by opening their doors to them and informally acting as their guardians in their new home. In addition, the students' proximity to the hospital (just across the street) and then to the school (less than a five-minute walk away) seemed to be favorable factors for their learning journey. A new chapter in their lives had begun. The prospect of a career as a healthcare worker in a country where the health profession is considered a privilege brought them unprecedented joy.

Amuchin, like his friends, quickly settled into his new environment, where an exciting training journey in the healthcare profession seemed within reach. He spent his days in classrooms and hospitals, quickly making a place for himself as a nurse intern and combining theory with practice to gain hands-on experience. The nursing school and Phebe Hospital are located next to each other and operate as a single entity, providing students with practical learning opportunities. All students are required to complete an internship at the hospital at some point during their studies, but the most eager students, like Amuchin, managed to arrange an internship on the wards on their own initiative during their first year. Amuchin was thrilled to don a hospital gown and begin practicing

the healing profession he had dreamed of. However, the excitement about this new journey was short-lived—Amuchin and his friends were soon confronted with a deadly disease that was new to them in practice: Lassa fever. “From my own county,” Amuchin says, “I only knew about Lassa fever on paper, I knew the signs and symptoms from reading, but I had not seen how it affects people, the physical manifestations of it…,” he explained, recounting his first encounter with the disease.

Bong County is known to be one of the counties most affected by Lassa fever in Liberia (Dwalu, Jetoh, et al. 2024; L. NPHIL 2023; Jetoh et al. 2022), with recurrent cases reported and managed at Phebe Hospital, a referral hospital established by the American Lutheran Church in Liberia in 1965 in Suakoko District (Miller 2011). In fact, local people refer to the hospital’s surrounding communities, namely Phebe Airstrip, Suakoko, and Rubber Factory, as the “Lassa belt” of Bong County because of the recurrent cases of Lassa fever reported in these localities throughout the year, with peaks recorded during the dry season (Dwalu, Jetoh, et al. 2024). To underscore the endemicity of the disease in the county, a surveillance officer once told me that “Lassa fever is a nightmare for people in Bong County.” Amuchin and his friends did not escape this nightmare when they arrived in the viral atmospheres of Bong County. Their misfortune began when the dreaded disease, which has long been recurrent locally, broke out in their shared residence.

3.3.1. Encounters with the Lassa Virus

Life in Bong County’s viral atmospheres remains entangled with the risk of contracting Lassa fever, which is endemic to the region in Liberia. The exposure frontiers encompass domestic spaces in the communities most affected by the disease across the region. This domestic space is connected to the isolation unit (IU)—the medical

space—at Phebe Hospital by more than just the disease; it is also connected by the emotions, feelings, and memories the disease triggers in affected community members. Community members in the hardest-hit villages are well aware of the endemicity of the disease in their communities and have adopted the term *Lassa belt* to describe it. This reality is probably due not only to the recurrence of Lassa cases but also to their proximity to Phebe Hospital, which is home to Liberia's only dedicated Lassa treatment center and has a long-standing history of conducting public health outreach activities in the surrounding communities. Additionally, the proximity of medical training facilities such as the Phebe College of Health Sciences and Cuttington University appears to have facilitated the familiarization of community members with health-related issues.

However, this contextual reality was not the case for people from non-endemic areas, such as Amuchin and his friends, who had moved to the region to study. Unlike their native county, which is not known to be a Lassa-endemic area, Amuchin and his friends confronted the reality of living in a viral atmosphere when cases broke out in their group upon their arrival in Bong County. Thus, their student adventure quickly turned into a back-and-forth journey between their residential building and the Lassa-fever treatment center at Phebe Hospital—locally referred to as the *isolation*, short for the Isolation Unit (IU). Amuchin recalled that the outbreak began with the diagnosis of one of his close friends, a fellow student who was subsequently admitted to the IU. Shortly afterward, a second student in their group tested positive. These back-to-back infections shocked the student community. When one of the two fellow students—a close companion of Amuchin—succumbed to the illness, the emotional impact was profound. In their circle, the IU began to evoke not only a clinical space for care, but also a deeply emotional geography characterized by fear, uncertainty, and anticipatory grief. This loss

intensified the prevailing belief, already circulating within the surrounding communities, that the IU was less a place of healing than a space of no return.

It is worth noting that this belief had been reinforced during the 2013–2016 Ebola outbreak, when the same IU initially served as an Ebola treatment center. High mortality rates and frequent corpse removals were reported at the time, and these events remain fresh in the memory of locals. This widespread perception was reflected in the words of the local surveillance officer who described Lassa fever as a "nightmare" in Bong County, where the IU has increasingly become perceived as a place where people go to die—what I refer to here as a *deathtrap*. Indeed, Amuchin's group experienced this phenomenon firsthand. After their friend's death, the IU loomed in their minds as a place where people go to die.

Crucially, this perception of infectious-disease treatment centers as deathtraps is not unique to Phebe's IU or to Lassa fever. Across West Africa, communities affected by viral hemorrhagic fevers such as Ebola and Lassa fever have developed similar views of treatment centers as ambiguous or zones of danger. During the 2014–2016 Ebola epidemic, for example, Ebola Treatment Centers (ETCs) in Guinea, Liberia, and Sierra Leone were frequently viewed with suspicion and dread. As Richards et al. (2019) and Abramowitz et al. (2015) have documented, communities often believed that patients were deliberately harmed in these centers—accusations ranged from organ harvesting to disease amplification through biomedical intervention. This distrust did not emerge from mere ignorance, but from historical experiences of medical systems failing local people. In Sierra Leone, for example, ambulance rides to the Ebola ward were perceived as "a one-way ticket to a death camp from which no one ever returned," reflecting how deeply

the treatment center had become associated with death. Similar dynamics occurred in Liberia and Guinea, where families, cut off from their hospitalized loved ones with minimal communication, often received only the news of death and a sealed body bag. The lack of transparency, coupled with grief and the inability to perform traditional funerary rites, fueled conspiracies that what happened inside these isolation facilities was malevolent. In short, the affective atmosphere around treatment units was one of terror and mistrust.

Similar perceptions were reported during Lassa fever outbreaks in Nigeria, where patients avoided Lassa Treatment Centers (LTCs) due to negative perceptions of formal treatment facilities, which are mostly associated with negative outcomes (Achem et al. 2025). This is particularly important in situations with low survival rates and minimal visibility in the treatment process. However, it is worth noting that in contexts of fear and distrust of medical systems, low survival rates may most often be an unseen consequence of late admissions when people experience symptoms. Amuchin underscored this reality when he told me that “late admission kills…” While survivors understand and recognize this aspect of hemorrhagic fever disease treatment afterward, community members with little visibility of the treatment process often blame the relatively high mortality rate on malevolent activities that may occur in treatment centers. Speaking of mortality rates, from June 2021 to February 2024, I counted in the IU’s records 83 PCR-positive Lassa patients. Among them, 17 patients died, showing a mortality rate of 20 percent. This means that 66 patients survived and, despite negative perceptions, came out of the assumed deathtrap of the IU.

While these conspiratorial interpretations are often dismissed in biomedical discourse, they are part of broader affective and epistemological responses to illness, death, and containment within emergency health systems. It is crucial to understand them not as irrational fears, but as socially meaningful responses to systemic opacity. In the case of Amuchin and his peers, their proximity to the IU through the death of their friend intensified this social imagery, portraying the IU as a traumatic medical space. They grieved not only for a life lost, but also for the unspoken trauma of entering a medical space with a reputation for destroying hope and offering little transparency in return.

The loss of a schoolmate and friend from the same town who traveled in search of medical knowledge to build her career was traumatic for the group of students, including Amuchin. Unfortunately, Lassa, the killer virus, was oblivious to the grief it had caused as it moved on to its next victim. Not long after, the virus jumped to the next apartment: their mentor, the nurse who lived next door (the "mother" figure to the students), developed a persistent fever. The woman was admitted to hospital. As is common practice in malaria-endemic areas, where fever is most often equated with malaria, she was given a malaria test and started on malaria treatment. However, when her fever persisted despite the malaria treatment, a PCR test for Lassa fever was performed and the results were positive. She was promptly moved into the IU. Her husband, himself a healthcare worker, donned protective gear to assist in her care. Despite all efforts, she died in the same medical space—the IU—just a short time after the student had passed away there. Two deaths in quick succession, both from the same building—that is, the same domestic space—sent shockwaves through the apartment block and the entire Phebe Hospital community where they both worked.

The *domestic space* formed by the group of students and their host family in their shared residence suddenly became seen as a dangerous locus of exposure—a place tainted by Lassa. Fear and distrust blanketed the building. Other community members began to avoid it, shunning its residents as potential carriers of the virus. The occupants themselves, stricken by grief and anxiety, quietly began questioning each other to try and identify who brought the deadly infection to their residence. A subtle blame game emerged in whispers—an effort to pinpoint an "index case."

According to the bereaved husband, the students were the source of the infection. He noted that although these affiliating students came from a county not known to have Lassa fever, they might have contracted the infection through their interactions within the surrounding communities known to be the Lassa belt of the county. All of the students had been healthy until one of them fell ill shortly after arriving. In his view, that student's case was the spark that ultimately led to his own wife's infection. He explained: "... whenever there's an outbreak, most time you find majority of the cases coming from the Airstrip belt. And sometimes, it [Lassa fever] also comes from some affiliating students. Like in the case of my wife, some affiliating students from Bomi came, they were lodging in the next apartment to us. When they came, we opened our home to them... they were using our dishes, our spoons; everything was okay... until one of them came down with Lassa fever. Then... few of them followed... I think altogether like three or four in total."

By tracing the sequence of cases, he firmly identified the first student as the origin—implying that Lassa was brought into the house by these outsiders. Amuchin, however, was not so sure. He recalled that the couple had traveled to a funeral outside the county shortly before the nurse fell ill. Funerals are high-risk events for viral

transmission (as the Ebola epidemic sadly proved), and Amuchin wondered if she could have acquired the virus there. The husband acknowledged that his wife returned from that trip unusually fatigued, but he maintained that the funeral was unrelated, insisting that the deceased at that ceremony had died of a sudden cardiac arrest, not an infection. In his mind, all signs still pointed to the students. Thus, as this viral atmosphere took shape at the residential level within a known Lassa belt, it was suffused not only with fear but also with accusation.

Here, we see a classic pattern that Paul Farmer famously termed the "geography of blame." During epidemics, blame is often attributed to specific individuals or groups, often those considered "outsiders" or socially marginalized, as well as to particular places (Farmer 2006). In this case, the spatial stigma of being a "Lassa house" fell on the apartment building, while the moral stigma of being disease carriers fell on the newcomer students in the eyes of some. This mirrors historical responses to outbreaks elsewhere. In the early twentieth century, for example, Mary Mallon—infamously known as "Typhoid Mary"—was an Irish immigrant cook stigmatized and isolated for unwittingly spreading typhoid fever. Priscilla Wald (2008) notes that Mallon's case became the prototype of the "outbreak narrative," casting a lone individual as the culpable index case in a dramatic story of contagion. The public, eager for a simple explanation, latched onto the idea of a dangerous outsider bringing disease. Mary Mallon's immigrant status and occupation made her an easy target for xenophobic blame—much as Haitians were later vilified in early AIDS narratives (Farmer 2006), or Africans were demonized during Ebola (Smith-Morris 2017). In Bong County, the students from another region played a similar narrative role: newcomers whose arrival preceded disaster, fitting a plotline of an introduced scourge.

Significantly, modern epidemiology offers more nuanced terms such as "superspreader" to describe individuals who, due to a confluence of biological, environmental, and social factors, infect an unusually high number of others (Stein 2011). The concept of superspreaders arose in order to improve our understanding of the transmission patterns in diseases such as SARS, MERS, and, more recently, COVID-19, where a small proportion of cases account for the majority of secondary transmissions (Kupferschmidt 2020). While the term is analytically useful, it is often used in a moralizing way in public discourse. During the pandemic, so-called superspreaders were frequently portrayed in the media and in social commentary as being irresponsible, or even criminal, whether they were individuals who attended large gatherings while symptomatic, or who traveled without disclosing their contact history (Gollust, Nagler, and Fowler 2020). In some instances, superspreading was explicitly tied to questions of personal blame, suggesting that transmission was not just epidemiological but also a moral failure (Althouse et al. 2020).

The continuity with the Typhoid Mary archetype is evident: society remains eager to identify an individual to whom it can assign responsibility for contagion (Wald 2008). While this approach personalizes public health crises, it often comes at the cost of nuance and empathy. In Amuchin's case, however, the blame is not unidirectional but contested. The students suspected that the neighbor contracted the virus during a funeral trip outside the county—a known risk factor in Lassa and Ebola outbreaks—while the neighbor, in turn, blamed the students for bringing the virus into the household. Each party identified the other as a potential superspreader, not necessarily out of malice but out of a desperate need to make sense of tragic outcomes. This mutual suspicion illustrates how, in viral atmospheres saturated with fear and uncertainty, blame attaches

not only to individuals but to their movements and social roles—who came from where, who interacted with whom, and who breached invisible epidemiological boundaries. Even intimate or compassionate acts—like hosting a student or attending a funeral—are retrospectively reinterpreted as reckless or culpable. Thus, in outbreak settings, superspreading becomes as much a moral category as a scientific one, reinforcing long-standing tendencies to frame disease transmission in terms of personal failure rather than as a consequence of structural vulnerability.

3.3.2. Fever, Fear, and Hope

Fever is a common symptom in tropical rural areas (Bottieau and Yansouni 2018), where various meanings are attached to it, depending on local contexts and traditional medical practices that coexist with Western medicine in some places. In Liberia, in particular, identifying the exact cause of fever is challenging, given the countless number of causal pathogens for which there is almost no testing capacity, especially in remote areas such as the villages in Bong County. In Phebe Airstrip, the village considered to be the most affected by Lassa fever in Bong County's Lassa belt, fever is referred to as "Gbondofama" in Kpelle, the language spoken by the predominant Kpelle ethnic group in the region. According to one of my informants, Gbondofama literally means "the skin is hot," while "Gbondoklehoma" refers to high fever and is used to describe very hot and burning skin. My informant mentioned that, when they were kids, they used to drink a concoction of boiled herbs called "Djolobo" in Kpelle, which would cause diarrhea and eliminate disease. But nowadays, he argued, "everyone goes to the hospital."

Going to the hospital for fever means going through a screening process for Lassa fever, but also for any other infectious diseases under surveillance, such as Ebola and

COVID-19. At Phebe Hospital, the initial screening took place at the triage station, located at the hospital's main entrance and run by nurse aides. Their role was to identify and direct patients with a high fever and other symptoms indicative of diseases with epidemic potential. There, visual communications in the form of posters about infectious diseases such as Lassa fever were displayed on the wall. Next to these posters on the wall was a form titled "Algorithm for Basic Screening for Infectious Diseases," which used temperature measurement as the starting point of the algorithm. This highlights the commonality of fever in locally encountered infectious diseases.

Another form in use was related to screening for the most recent global pandemic, COVID-19. A close examination of these forms reveals that fever is the first symptom mentioned, highlighting its ubiquitous nature as a common symptom. When I asked the nurse aides why there was no screening form for Lassa fever, they replied that the form for COVID-19 screening included almost all the major symptoms of Lassa fever, such as fever, fatigue, sore throat, and joint and muscle pain. Furthermore, they reported that they were familiar with Lassa fever symptoms and would immediately isolate patients if they noticed any of them.

For patients admitted to the emergency room (ER) for urgent care, a broader screening covering a wide range of epidemic-prone diseases was carried out. In answer to the question of whether they had Lassa fever case definition protocols available, the ER nurses explained that they had received training on the disease, enabling them to recognize the symptoms. They also showed me a more comprehensive screening form titled the "IDSR (Integrated Disease Surveillance and Response) Case Alert and Lab Submission Form." This form was adapted from WHO's technical guidelines on

integrated disease surveillance and response, which were developed within the framework for monitoring and evaluating surveillance and response systems for communicable diseases (Nagbe et al. 2019). The form included WHO priority diseases under surveillance in the country, such as Lassa fever, Ebola virus disease, and other hemorrhagic fever diseases (see WHO 2019a, 15-27 for priority diseases). Nurses reported that they completed the IDSR form for each suspected patient to help detect cases of Lassa fever or other epidemic-prone diseases. The form lists various infectious diseases that require surveillance and alert measures, along with symptoms and the steps to be taken, such as isolating suspected cases and collecting and testing samples in a laboratory for confirmation.

To understand the extent to which the IDSR form captured suspected Lassa cases in a context where fever is ubiquitous, I consulted the available registers in which cases were recorded at the IU. Between June 2021 and February 2024, 106 suspected cases were recorded in these registers, of which 83 tested positive. The remaining 23 cases tested negative but were still isolated at the IU for at least 24 hours (the time required for the PCR test to be completed) and underwent the ribavirin regimen while awaiting the laboratory results. This anticipatory isolation and treatment were undertaken to prevent the spread of the virus and increase the likelihood of survival should the patients' samples test positive. Although PCR testing began at Phebe Hospital in May 2021, a second sample was still sent to the national reference laboratory in Monrovia for confirmation of the tests conducted on site at Phebe Hospital, causing further delays to the timely response based on the test results. Ultimately, this double testing was abandoned when the on-site laboratory at Phebe Hospital proved reliable following a

verification period, after which medical decisions were based solely on the on-site PCR results.

It should be noted that admitting non-Lassa cases to the IU exacerbated the atmosphere of fear and mistrust surrounding the screening process, as people found the over-screening troubling and difficult to understand. This situation was particularly striking at a time when Liberia had no PCR machine with which to test for Lassa fever. At that time, all suspected Lassa samples had to be sent by road to Kenema in neighboring Sierra Leone, a process that could take a minimum of three days before the results could be received back. Consequently, the triage principle based on symptoms erred on the side of caution rather than taking a wait-and-see approach, given the virulence of Lassa fever, in order to avoid nosocomial infections and patient loss.

However, this was not fully understood by those involved, due to their fear of entering the IU and the humiliation of being identified as a Lassa fever patient. Some people thought that healthcare workers in charge of screening did not know their job well and considered all high fevers to be Lassa fever. One of my informants was admitted to the IU based on clinical screening and started ribavirin treatment before her test results from Kenema (Sierra Leone) came back negative. She believed that the fever she had developed was just a “high fever” and not Lassa fever: “So, for me, I feel like Lassa fever is just a high fever for now; it's not real like before.” She based her argument on the fact that fever is not often accompanied by other major symptoms. She elaborated as follows: “Before, I felt that Lassa fever was real, but now I don’t. It’s just malaria. Now, you hardly ever see all the symptoms together; only occasionally do you see them. Before, you would see someone bleeding with red eyes, a sore throat, and a swollen neck, but these

days, you don't see it." This shows how challenging it is to convince people in the Lassa belt who only have a fever and no other symptoms that they might have Lassa fever in the early stages, even when a PCR test confirms this.

With the memory of past over-screening, and assumptions that those working on the Lassa research project benefit from declaring more cases, people tend to be reluctant to go to the hospital when they have a fever. They first opt to self-manage the fever they consider to be malaria, either by taking tablets, or by seeking help from a close relative who is a healthcare worker. This was the case for Amuchin, who developed a fever amid an atmosphere of mounting fear and tension in his apartment building, where previous cases of Lassa fever had been reported, including fatal ones. Immediately, anxiety spiked among his friends: was Lassa now striking again? In Bong County, where both Lassa fever and malaria are endemic, fever becomes more than a biomedical symptom—it is a charged affective signal that generates uncertainty, suspicion, and dread. In the region's viral atmosphere, fever is not simply interpreted as a bodily state but becomes a trigger for emotional escalation and diagnostic speculation. Therefore, any fever raises red flags because the early symptoms of Lassa fever—mainly fever, fatigue, headache, and muscle and joint pain—are similar to the symptoms of malaria.

This pattern reflects a widespread therapeutic sequence: in West Africa's endemic areas, a febrile illness is typically managed as malaria first (Stoler and Awandare 2016), and alternative diagnoses (like Lassa fever) are considered later if the patient does not improve. Health workers themselves almost always follow this approach, starting malaria treatment based on symptoms and only pivoting to Lassa tests when malaria therapy does not resolve the fever. On the one hand, this presumptive malaria treatment

enables a rapid response to the region's most common illness, malaria; on the other, it contributes to the delayed detection of deadly diseases like Lassa fever, as we see in Amuchin's case below.

Following his bout of fever, Amuchin strongly suspected that he knew the moment of his exposure: when he had helped carry his neighbor (the nurse—his then acting mother) into the car on her way to the hospital. He remembered her burning with fever as he lent a hand to her husband. "… I saw the husband struggling to put her in the car, so I can't see my very close relative or associate person to me, and I leave them. So, I went to help to carry her…," he said. "But two to three days after carrying her, I felt sick…" As his temperature climbed, a new wave of dread swept over him. His girlfriend, a student midwife, urged him not to go to the hospital. She pleaded that if he went to the IU, he might never come back. "'Oh, the isolation here, when you get there, it's hard for you to come back; … some people can go in the isolation strong, but for them to return, it's hard, they will always come up with their corpses. So, I don't want you go to the isolation,'" she warned, echoing the deathtrap image of the highly emotionally charged space of the Lassa treatment unit. Determined that he avoid the IU, she began treating him in secret for malaria—injecting him with antimalarials in the evenings, hoping the fever would break. Amuchin acquiesced at first, equally afraid of being whisked into the isolation ward. But the fever only worsened. Deep down, he feared it was Lassa, not malaria.

Similarly, another survivor described how his illness began and how he initially suspected malaria: "… because Lassa comes as a signal of malaria. So, when I got sick, I started taking my malaria treatment, but still the malaria was not breaking down. So, my family decided to carry me to the hospital. We went there, they gave me malaria

treatment; for the first time, it cooled it down. But when we got back home, I started developing a nap in my throat [sore throat]…" Further questioning of this survivor about the malaria treatment he had self-administered revealed that he had equated the fever he developed with malaria, for which he mentioned paracetamol, an analgesic and antipyretic drug, as the treatment he had taken before going to the hospital where he received proper malaria treatment, probably following a rapid diagnostic test (RDT).

These experiences reflect the well-documented therapeutic and emotional trajectory of fever management in Africa's febrile disease belt. The immediate recourse to informal malaria treatment, driven by fear of hospitals and isolation as much as by local clinical reasoning, highlights how endemic disease landscapes produce not just diagnostic patterns, but also affective atmospheres of dread and care. Current literature converges on this point: fever management is deeply intertwined with local experiences of loss, stigma, and mistrust (Raabe and Koehler 2017; NCDC 2018), as demonstrated by Amuchin's account.

In fact, social scientists have described a "malaria-industrial complex," whereby fever is automatically equated with malaria, often at home. This default diagnosis is reinforced by the fact that malaria symptoms overlap with those of other febrile illnesses, such as Lassa fever, typhoid, and influenza (Stoler and Awandare 2016). In this context, the "malaria-first" approach is a pragmatic form of medicine, a social practice, and an emotional refuge in the shadow of the threat of an epidemic. Indeed, it offers people hope, as they believe that malaria, a very common and curable disease, is preferable to Lassa fever, a deadly virus. We see this echoing on the cancer ward in Botswana, where

HIV appeared to be a more hopeful diagnosis than cancer due to the perceived severity of the latter (Livingston 2012b, 95).

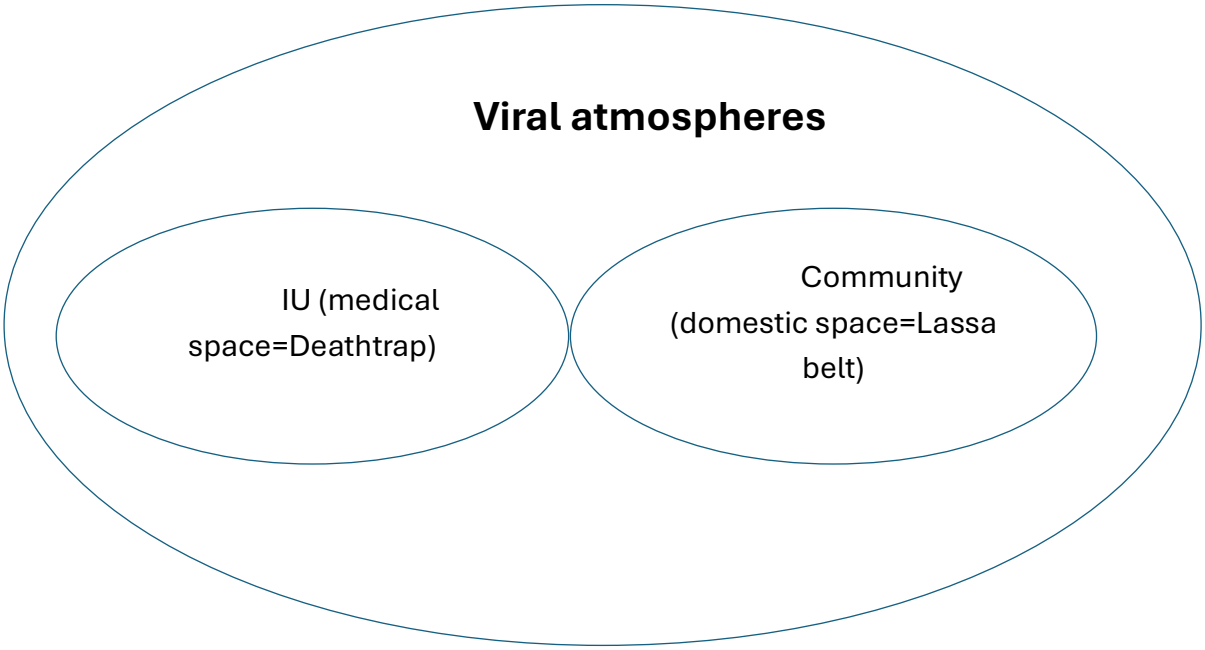

Figure 10: *Illustration of the viral atmosphere of Bong County, consisting of the affected communities ("the Lassa belt") and the Isolation Unit ("the deathtrap") at Phebe Hospital.*

3.3.3. Diagnosis and the Emotional Toll of the Isolation Unit

Under mounting pressure from a doctor who knew the pattern of Lassa in their household, Amuchin reluctantly agreed to have a blood sample sent for Lassa PCR testing. Two days later, while Amuchin was working a shift in the outpatient department (trying to carry on normally), the result came back: positive. A staff member abruptly informed him of his diagnosis and told him he had to be admitted to the IU immediately. Amuchin was in disbelief; he had not even seen the lab report himself, and the brusque delivery of the news rattled him. When his friends heard, they erupted in protest. They felt targeted—*persecuted*, even—as outsiders who had brought nothing but trouble upon themselves by coming to Bong County. Amuchin recalled the scene:

“We were three that were being isolated when we came for our study, but one died. The first person that was diagnosed of Lassa in our group died. So, later they carried another girl. So, my own, when they diagnosed me, it was serious chaos. All my colleagues came and said: ‘We just came here to study and you’re vexing us—every minute you’re telling us we get Lassa! This man can’t go to isolation.’ Each time I tried to move, my friends would pull me back: ‘My man, you’re not going over there!’ So, it was a tough show; they fought…”

The prospect of the IU—by then almost synonymous with a death sentence in their minds—was so terrifying that they attempted to physically block Amuchin’s admission. Such is the power of the viral atmosphere: even when gravely ill, a patient and his peers might fight tooth and nail to avoid the very facility that could save him. The fear of the medical space outweighed the fear of the disease itself. However, from a medical perspective, admission to the IU was nonnegotiable: Lassa is highly contagious, and isolation of confirmed cases is essential for infection control. Eventually, through the intervention of a sympathetic nurse and a doctor’s counseling, Amuchin was persuaded to go. The nurse gently told him that early treatment could save his life, and the doctor advised him to drink as much water as possible once inside. Summoning courage, Amuchin “got effort for going to the isolation”—essentially steeling himself—and entered the ward, despite his girlfriend’s tears and his friends’ anger. What followed was one of the most harrowing experiences of his life. He recalls bursting into tears upon arrival. The IU’s atmosphere was thick with despair. He was acutely aware that he was now in the same room where his friend and his then acting mother had recently died. In fact, he was placed just three beds away from the one from which his neighbor’s corpse had been

taken. “Every time I thought about her bed, I felt fear,” he said. “They brought me to a room where somebody’s corpse went out; maybe I won’t survive either.”

Amuchin’s terror was fueled by all he had heard about the IU. Before he fell ill, even some hospital staff had confided their own dark views of the place. One physician assistant had told him in confidence: “When you get in there, to come out is hard. Many people go in and remain there—they only come out as corpses.” Indeed, local health workers themselves were not immune to the viral atmosphere of fear. Another health professional admitted to me once that before starting work on a Lassa project, she had regarded a Lassa diagnosis as a “death sentence.” With such notions circulating, it is no surprise that patients often arrived petrified, which in turn could worsen their condition. Gopu, another survivor who was a nurse at Phebe (and, by tragic coincidence, the sister of the nurse who died), said that she “felt bad and thought of death” as soon as she was diagnosed. Knowing she would have to be treated in the same IU where her sister had just died a month earlier, Gopu panicked. She even begged to be isolated elsewhere but was told that no other facility existed for Lassa patients. For the first two nights of her admission, Gopu was the only patient in the ward, left alone with her fear. Locally, people whispered that the IU was haunted, and in those solitary nights Gopu felt the weight of those rumors. The sudden, unexplained death of another nurse—a former colleague who had seemed to be recovering but died on the eve of her discharge—loomed large in the staff’s collective memory. Some attributed that death to mysterious forces. Gopu herself wondered if “big, big things” [spirits or demons] lurked in the IU, tormenting patients. In the darkness, every anxiety amplified the fear: *what if the virus isn’t my only enemy here?*

3.3.4. The Spiritual and Psychological Toll of the Isolation Unit

Spiritual interpretations form part of the local moral and cosmological landscape, offering an explanation for why so many people die despite receiving treatment. As Mary Douglas observed, communities facing pestilence often invoke spiritual or moral pollution when suffering defies ordinary explanation (Douglas 2013). In Bong's viral atmosphere, during the Lassa fever outbreaks, biomedical explanations circulated, yet there were also whispers of witchcraft and demon attacks. This is not unique to Liberia or West Africa—around the world people turn to supernatural etiologies in times of epidemics. Medical anthropologist George Foster famously categorized illness explanations into "personalistic" versus "naturalistic" systems: in many non-Western contexts, disease is attributed to the *active, purposeful intervention* of an agent such as a witch, spirit, or deity, rather than random chance (Foster 2016). In these personalistic frameworks, there is no accident involved in misfortune or illness; someone or something must be responsible.

Such views do not necessarily replace biomedical reasoning but complement it. As Evans-Pritchard observed in his classic study of the Azande, people understand the germ or physical cause of an illness yet still ask *why* misfortune struck a particular person at that moment—and the answer is witchcraft or spirits. In other words, Zande belief in witchcraft in no way contradicts empirical knowledge of cause and effect. The virus may explain how someone fell ill, but only a spiritual cause can explain why this individual, at this time, suffered so direly. Ideas about health are thus often inseparable from religious belief and cultural notions of misfortune. Communities facing lethal outbreaks employ these frameworks to restore a sense of meaning and order in chaos, often assigning

moral or spiritual *blame* for the scourge (Douglas 2013). Far from being "irrational," such interpretations follow their own internal logic and serve important psychosocial functions, providing an explanatory model when medicine has no answers.

In the Lassa fever context, both patients and their families in Bong turned to prayer and spiritual reasoning amid the terror of the IU. Gopu and her brother-in-law both turned to prayer. "I said, 'Let me go to the church; if there is any spiritual thing involved, the pastor will back it up,'" Gopu reasoned, seeking divine protection before her test result even arrived. Her brother-in-law, watching his wife in excruciating pain in the IU, phoned a pastor from her bedside. Over the phone, the pastor prayed and later told him that he had seen a "huge demon" holding his wife under water, attempting to claim her. The pastor called her soul back in Jesus's name, and in the brother-in-law's account, her condition briefly stabilized. Although his wife ultimately did not survive, this family interpreted her suffering (especially her inability to swallow) as both viral and spiritual—Lassa attacking her body, a demon attacking her soul. This dual attribution reflects the plurality of causes recognized in many African explanatory models (Tuffour 2024; Shange and Ross 2022).

Anthropologists have documented similar blends of interpretations in other crises. For instance, during the Ebola epidemic in Sierra Leone, some Christian pastors and their followers declared that Ebola represented a punishment from God for societal wrongdoing or was the work of "angry ancestral spirits" alongside witches and demons (Bangura 2016), claims which resonated with long-standing cultural perceptions of mysterious disease. Likewise, in rural Haiti's AIDS epidemic, villagers often believed that AIDS could be "sent" through sorcery by someone envious or seeking harm, even as they

acknowledged the virus itself—a phenomenon Paul Farmer documented as "sent sickness" (Farmer 1990). Across cultures, when an affliction beats imagination and defies any explanation, people are quick to consult spiritual healers who might reveal a hidden agent or motive behind the illness (Sylvia 2000; Moshabela et al. 2017). These frameworks locate causality in human relationships and moral balance: illness may signal that something is amiss in the spiritual realm or social order, not just the body.

In the cultural context of Bong County, the viral atmosphere is not only biomedical but also spiritual and moral. Illness may be seen as a sign of spiritual imbalance or malevolent forces at work, especially when it defies normal caregiving and medical interventions. Gopu's brother-in-law, himself a healthcare worker, exemplified this blending of domains. Despite his medical knowledge, he was convinced that beyond the physical infection, his late wife had been attacked spiritually. Struggling to find meaning in a senseless death, he cast suspicion on her own family members. He believed some relatives were jealous of his wife because she had inherited property from a late aunt in the USA—a prosperity that, in his view, provoked a spiritual attack.

This narrative closely parallels widespread witchcraft discourses in West Africa, where envy and family tensions are thought to manifest as occult harm. Indeed, in many African contexts, rapid success, wealth, or inheritance can invite suspicions of witchcraft[8] (Adolfsson, Banik, and Dulani 2024). In the brother-in-law's account, his wife's relatives had allegedly killed the aunt over that property, and now "they did not appreciate the idea of my wife inheriting and managing this property in Liberia," so they

[8]Olsen (2002) provides a historical and anthropological account of the Asante region (Ghana), documenting how newfound wealth or success often invited accusations of witchcraft, especially within kinship networks.

targeted her with lethal magic. He even pointed to a warning from their pastor: when his wife was about to attend her brother's funeral, the same pastor who prayed with them in isolation advised, "I don't want you to go on this trip… if you go, your life will be at stake. Some of the people fighting you for your aunt's property will be at the funeral, and they want to get you." This preventive counsel suggests that the pastor also perceived an ongoing spiritual threat to her life.

The aforementioned example is emblematic of the enduring interpretation of illness as a disruption to the equilibrium between the physical and spiritual worlds. When this disruption necessitates isolation, as is always the case with highly infectious diseases such as viral hemorrhagic fever, interpretations of death become compounded by spiritual and conspiratorial factors that shape belief systems. Like Gopu and her brother-in-law, many other informants at Phebe Hospital reported that the IU was a demonic place where death was linked not only to physical disruption, but also to spiritual disruption, prompting them to resort to prayers.

The tragic outcome of her illness thereby became intertwined with a narrative of witchcraft and familial conspiracy. Such interpretations provide what anthropologist Victor Turner might call a *social drama* explanation of illness: a disruption in the equilibrium between the physical and spiritual worlds tied to social conflict (Turner 2003). As strict isolation removes the patient from normal social and ritual care, it heightens the sense that dark forces are at play. The very space of the isolation unit, where loved ones cannot physically comfort the patient, easily becomes seen as a haunted or "demonic" place in local imagination. Many informants at Phebe Hospital

described the IU as pervaded by evil and death, a realm where ordinary relations were severed and only spiritual means might save you.

Crucially, these beliefs, far from being irrational, provided families and even some health workers with a form of solace and a sense of agency. In an otherwise helpless situation, prayer and spiritual practices offered a tangible course of action. If a pastor's prayer could banish a demon, then there was still hope even when medicine ran out of answers. Engaging in spiritual coping became part of surviving the IU's oppressive atmosphere. This dynamic has been noted in many medical settings under duress. During the West African Ebola crisis, for example, people's resort to prayer, anointing oils, and deliverance services was partly an attempt to reclaim agency amid a terrifying, incurable disease (Bangura 2016). The belief that a "huge demon" or curse could be cast out through faith gave patients and families something to hold onto when clinical therapeutics were limited. From a psychological standpoint, such coping mechanisms may reduce anxiety and despair by reframing the illness as a battle that can be fought on spiritual grounds.

Even health professionals are not immune to these culturally ingrained frameworks. Gopu's brother-in-law, despite working in healthcare, found comfort in the idea that a pastor's intercession might succeed where medicine failed. Research on nursing in African contexts likewise shows that practitioners often see spiritual care as part of holistic healing. For instance, a study in Ghana found that most patients engaged in prayer, meditation, or religious music to cope with illness, and a majority felt that these practices positively contributed to their healing. Healthcare staff interviewed in that study acknowledged the importance of addressing patients' spiritual needs for overall

well-being (Osei-Yeboah 2024). Similarly, interviews with Tanzanian nurses revealed that prayer was seen as a powerful tool for hope and inner peace: “Prayers help in strengthening one’s faith and spirituality; they help in enhancing hope and bringing harmony among mind, soul, and body,…” one nurse explained (Dhamani, Paul, and Olson 2011). Such perspectives illustrate that in many societies, biomedicine and faith are not oppositional but complementary. Doctors and nurses, being part of the same cultural milieu, may quietly endorse or accommodate patients’ spiritual coping strategies, especially when conventional treatments are limited.

3.4. Carriers, Contagion, Stigma, and the Social Life of Disease

Throughout Amuchin’s and Gopu’s narratives, we see how contagion and stigma coproduce space. The isolation unit (IU) became a liminal zone where patients hovered between life and death, and thus it acquired the aura of a cursed place. The apartment building, once a home, became marked as an infected zone to be widely avoided. Anthropologists have described such marked locales as “zones of danger,” where social distance is enforced by fear. In public health terms, this is a form of “spatial stigma”—specific places become shorthand for disease and are shunned or scapegoated (Smith-Morris 2017). During Ebola, entire villages in Guinea or Liberia that experienced outbreaks were treated as pariahs; travel to those areas was boycotted, and villagers found themselves ostracized. In the United States, when Ebola hit Dallas in 2014, it was not just the hospital or the patient that were stigmatized—“Africanness” itself became suspect. Smith-Morris (2017) terms this phenomenon “epidemiological placism,” where a geographic identity (like West Africa) becomes negatively stereotyped due to disease. We see echoes of this in Bong County where the term “Lassa belt” is double-edged. On

the one hand, it is a factual descriptor of high incidence; on the other, it marks those communities in the belt as perilous places. Residents of these villages reported feeling that outsiders treat them “like Lassa people”—as if they themselves are vectors of disease. Likewise, survivors like Amuchin often face social rejection even after recovery.

A recent study in Nigeria found that 53 percent of Lassa fever patients experienced stigma or discrimination during and after their illness, including isolation by family and community. Over one-third of survivors reported that even once they were virus-free, neighbors continued to avoid them and even shunned their family members (Best et al. 2024). Amuchin and his girlfriend, who also contracted Lassa weeks after Amuchin was discharged, encountered this discrimination when they returned to their community, school, and hospital. After being discharged from the IU, her family refused to take her back, forcing Amuchin to live with her despite not being ready for a life together while being a student. Additionally, her schoolmates avoided her after being warned by school instructors to do so out of fear of spreading the virus at school. Likewise, some colleagues at the hospital were afraid to be near them, and they had to work to prove that they were healthy. In this way, the social scar of Lassa can linger long after the physical recovery—a phenomenon that can be likened to a social epidemic of fear and stigma (Olorunfemi, Akinpelu, and Oyegunle 2025; Perini 2018).

To put Bong County’s viral atmospheres in broader perspective, it is illuminating to compare them with patterns from past outbreaks. The archetype of Typhoid Mary remains instructive: she embodied the public’s fear of the human carrier—the seemingly healthy individual who can silently bring chaos. That narrative simplifies an outbreak by pinning it on a person, often reflecting societal prejudices (Mallon was an immigrant

working-class woman, which made her an easy scapegoat). In modern outbreaks, we still see the chase for "Patient Zero," whether it was Gaëtan Dugas falsely blamed for AIDS (McKay 2017) or a Korean church congregation blamed for a COVID cluster (Hernandez, Scarr, and Sharma 2020). In Amuchin's story, one could craft a simplistic outbreak narrative casting the student who first fell ill as the villain who brought Lassa, with Phebe Hospital's staff as the heroes containing it. But that would miss the deeper contextual reality: that Lassa was already endemic in the environment, that no one acted with malice or negligence, and that survival depended not just on medicine but on trust, timing, and community support.

Another key lens is superspreading events and how they shape outbreak geographies. In Bong County, their cramped apartment building served as a micro hotspot, much like how a single wedding or funeral can spark a chain of cases in other outbreaks (Kupferschmidt 2020; Frieden and Lee 2020). Recognizing these patterns without casting blame is crucial. Epidemiologists note that a "superspreader" often "hasn't done anything wrong"—it may be a function of biology (e.g., high viral load) or social connectedness (Stein 2011). Yet the public and even authorities often fall into blame, sometimes prosecuting people for disease transmission (Davies and Wenham 2020). This raises ethical questions: how do we balance responsibility and compassion? In Liberia's Ebola crisis, some survivors who tried to help sick relatives were later stigmatized or even criminalized for harboring patients (Overholt et al. 2018). The climate of fear can turn even humane acts into grounds for accusation. In Bong County's Lassa outbreak, we saw a husband effectively accuse the students of causing his wife's death, and the students, in turn, insinuate that the couple's travels were to blame. Each was searching for moral responsibility in a situation born of chance and ecology.

Meanwhile, spatial stigma affected not just the apartment building but also the IU and the broader community. Accounts of spatial stigma, whereby places such as apartment buildings, isolation units, or entire neighborhoods become labeled as "problematic areas" and this stigma adversely affects residents' life chances, are a central theme in the work of sociologist Loïc Wacquant (Wacquant 2008). In his work on territorial stigmatization, Wacquant analyzes how urban areas such as US ghettos or French banlieues come to be marked by a "blemish of place," which not only shapes public perceptions but also produces real, material disadvantages for those who live there. He demonstrates that once a place is viewed as disreputable, this "territorial stigma" becomes entrenched, resulting in isolation, social exclusion, reduced opportunities, and the internalization of shame among residents (Wacquant 2007).

The mechanism is not confined to the built environment but extends to institutions like hospitals, schools, or, in pandemic conditions, facilities linked with contagion or social problems. During the 2014 Ebola outbreak, for instance, Liberians from Lofa County—which had early cases—were treated with wariness in other parts of the country, as if they carried a miasma of Ebola. Internationally, citizens of Guinea, Liberia, and Sierra Leone faced travel bans and discrimination long after the epidemic ended, illustrating how whole nations can be stigmatized by disease (Overholt et al. 2018). By analogy, being from a "Lassa belt" can mark one with suspicion elsewhere. This is why global health agencies now avoid naming new diseases after places or peoples—an effort to prevent reinforcing prejudice (hence "COVID-19" instead of "Wuhan virus").

The term "Lassa fever" itself comes from a town in Nigeria where it was first identified, and that town's name is now forever linked to dread (Mamadu 2018). In Liberia,

fortunately, the communities in Bong County are not named in the disease, but being in the "Lassa belt" may have a similar effect. Development projects, NGOs, and researchers flock to these villages, sometimes unintentionally reinforcing the identity of the place as a site of pestilence (even as they try to help). Here we see how the geography of blame operates at multiple scales: from the household (the "tainted" apartment) to the neighborhood (the endemic villages) to the region (Bong County's reputation) and beyond.

3.5. Resilience and Solidarity in the Viral Atmospheres

While the viral atmosphere of Lassa fever in Bong County is often saturated with fear, uncertainty, and stigma, it is also punctuated by countercurrents of resilience, solidarity, and affective repair. These emergent dynamics, although fragile, form the social undercurrent that dilutes despair and triggers hope. In the midst of crisis, community members do not simply absorb the affective intensities that dominate outbreak narratives; they also generate new ones, actively reshaping the viral atmosphere through care, creativity, and communal action.

As B. Anderson (2014) suggests, atmospheres are not static backdrops but affective fields that are constantly in motion, susceptible to small acts that can alter the emotional balance of a place. In viral atmospheres, even a single gesture—offering help, returning home as a survivor, or breaking a silence—can shift the mood from fatalism to one of cautious possibility. During Ebola, for example, once survivors began returning home immune to the virus, some bravely volunteered to work in treatment units or to educate their neighbors, under the banner "We are survivors and not a virus" (Mayrhuber, Niederkrotenthaler, and Kutalek 2017). Community leaders in Liberia and Sierra Leone

stepped up to mediate between response teams and villagers, helping dispel rumors and reduce violent resistance (Abramowitz et al. 2015). These collective acts punctured the stigma-saturated atmosphere and replaced it—if only temporarily—with a sense of renewed personhood and public worth.

In Bong County's Lassa crises, similar affective shifts were observed. A local youth leader once told me that, to curtail the spread of the disease, they sometimes organize cleanliness campaigns in their village to get rid of rubbish dumps that attracted rodents into houses. These symbolically powerful acts asserted agency over an otherwise uncontrollable viral ecology. Survivors, too, played a crucial role in reorienting the affective field. Some became informal advocates, using their stories to convince others that Lassa is real but beatable if treated early – essentially trying to change the atmosphere from one of fatalism to one of vigilance and hope. Many of them volunteered to take part in a cohort study conducted by the partner university, which aimed to determine the persistence of the virus in human bodily fluids. They did so out of the conviction that their participation could help to develop effective solutions to the disease. This embodied form of hope work involved transforming personal suffering into biomedical capital—a resource for others. Their motivations were not only biomedical but also moral: by lending their stories and bodies to research, they challenged the silence, fear, and avoidance that surrounded Lassa fever.

Amuchin, a health worker and Lassa survivor, offers a vivid example of such transformative agency. After recovering from his illness, he continued in the health profession and often counseled new patients that Lassa "is not necessarily a death sentence if you go for care in time," countering the narrative that nearly kept him from

seeking treatment. In our interview, he assured me that he was still available for any Lassa-related activity, so that people could learn about his experience and avoid further suffering. He also remained faithful to and supportive of his girlfriend, who was disowned by her family because she contracted the virus from him. In viral atmospheres where romantic and familial ties are often severed by fear and blame, their enduring relationship challenges avoidance and opens space for affective repair. Gradually, these efforts chip away at the deathtrap image of the IU. Each survivor's story slightly shifts the collective mood, infusing a bit of hope into the viral atmosphere.

These moments do not dispel the oppressive atmosphere, but they disrupt its uniformity. What Park (2025) refers to as "felt changes"—small, perceptible shifts in the emotional climate of a place—become apparent in the accounts of Lassa survivors who speak out, return, and show care. These micro-transformations contribute to what might be termed atmospheres of endurance and renewal—zones where survival becomes not just biological but social and ethical.

3.6. Conclusion

The viral atmospheres of Bong County encapsulate the complex interplay of virus, emotions, and place. The IU and the community are entangled in a feedback loop: fear and rumors from the community imbue the IU with dread, while real experiences of loss in the IU reinforce its deathtrap image and feed back into community stigma. This case study resonates with outbreak experiences around the world—from Typhoid Mary to Ebola—showing both continuity and change in how we respond to epidemic threats. The continuities are evident in the enduring patterns of stigma and blame: we still seek someone or somewhere to fault, whether it's a person (Mary, "Patient Zero," the student

from Bomi) or a place (the “Lassa belt,” West Point, West Africa). The changes lie in our better understanding of these dynamics and attempts to mitigate them. Public health now recognizes that controlling an outbreak requires fighting the epidemic of fear as much as the virus. Risk communication, community engagement, and cultural sensitivity are seen as integral to outbreak response, precisely to prevent the kind of mistrust that made Amuchin and his friends so wary of the IU.

Ultimately, alleviating the weight of a viral atmosphere involves more than medical expertise; it requires empathy and reflexivity. We must acknowledge the validity of local fears—the deathtrap image was extreme, but it emerged from real experiences of loss and opacity. By increasing transparency (e.g., letting families know what happens in the IU, involving survivors in public education) and improving care outcomes (early treatment, sufficient resources so that more patients survive), the atmosphere can be shifted. Paul Farmer’s (2006) plea to replace the geography of blame with a geography of compassion is pertinent here. Rather than stigmatizing communities like those in Bong County, stakeholders should invest in them: improve housing to reduce rodent exposure, strengthen the health system so that “going in” to the IU is not seen as a hopeless last stop, and support survivors in reintegration. Such efforts help transform the affective ambience from one of terror to one of trust.

Amuchin’s words—“Going in is easy, coming out is hard”—captured the grim reality of a particular moment in Bong County’s history. But by understanding the layers of meaning in that statement, we see a path forward. It is an indictment of systemic failings (why should coming out alive be so hard?) as much as it is a personal fear. To change that reality, one must change the viral atmosphere itself. This means addressing

not only the virus through medical science, but also the social contagion of fear (Perini 2018) through community engagement and the stigma through public education and survivor support. The story of Lassa survivorship in Bong County, when put in conversation with broader scholarship, teaches us that epidemics are social phenomena as much as biological ones. The zones of danger can be made safer through trust, the geography of blame can be remapped with solidarity, and the heavy atmosphere can slowly be lightened by hope. In the end, outbreaks are fought not just with ribavirin and isolation, but with understanding, empathy, and the collective will to ensure that *coming out* becomes as common as going in.

Chapter 4

Navigating Protocols and Parental Obligations of Care in the Lassa Fever Isolation Unit at Phebe Hospital in Liberia

4.1. Introduction

Images of viral hemorrhagic fever (VHF) treatment centers have always been associated with fear and isolation. During Ebola outbreaks, for example, patients are treated in special units cordoned off by high fences and barbed wire, often resembling prisons rather than places of healing (2017; WHO 2015a). Health workers move about in head-to-toe protective suits—described by locals as looking like "spacesuits"—and they take patients into quarantine wards from which few are seen to return (WHO 2015a). Such scenes, which are widely circulated in media and popular discourse, evoke a visceral sense of dread. They reinforce the terrifying narrative of diseases such as Ebola and Lassa fever as deadly, incurable contagions that separate the sick from their communities (Brown and Marí Sáez 2021). Indeed, the fear and stigma surrounding these centers have been well documented (Abramowitz et al. 2015; Richards et al. 2019), sometimes discouraging patients from seeking care. The sight of anonymous figures in hazmat suits and the knowledge of a high fatality rate create an atmosphere of despair and apprehension both inside and outside the treatment units (WHO 2015a).

Given the extreme infectiousness of VHFs such as Ebola and Lassa, clinical care in dedicated treatment centers is organized around stringent standard operating procedures (SOPs) for infection prevention and control (IPC). Patients are subject to a triage process and are isolated in zones clearly delineated as high risk. Only personnel

deemed to be essential are permitted to enter, and they are required to adhere to meticulously choreographed protocols for the donning and doffing of full personal protective equipment (PPE). Restrictions are imposed on invasive procedures such as injections and phlebotomy, with these being performed only when strictly necessary, and all potentially contaminated surfaces and materials are disinfected. National and international guidance for Ebola and other VHFs generally stipulates the utilization of single rooms or high-risk areas with controlled access, dedicated lavatories, closed doors or fenced perimeters, and stringent logs of every individual entering the clinical space (WHO 2015b). In order to prevent the further transmission of the virus, human contact is severely restricted. Visitors, including family members, are almost never permitted; in many hemorrhagic fever disease treatment units, no family members are allowed inside under normal circumstances.

Ethnographic accounts from West African Ebola treatment units illustrate how this policy radically disrupts normative caregiving patterns. In these patterns, relatives usually provide care for the sick by feeding, washing, and sitting with them. The policy replaces family presence with brief, protocol-bound encounters with anonymous figures in PPE. The ethos of these SOPs is encapsulated by the following account from a frontline nurse: “In Africa, it is usually the family that feeds, washes and comforts the patients. But no family members are allowed inside our treatment center” (Kovack 2014). This phenomenon captures the ways in which infection control measures often overshadow conventional forms of intimate care.

Within these constraints, treatment teams work in short, timed shifts inside the high-risk zone to limit heat stress and fatigue associated with wearing impermeable PPE.

The focus is on supportive measures such as oral and intravenous rehydration, electrolyte correction, symptom control, and nutrition. A body of research, including mixed-methods studies from Lassa fever treatment centers in Nigeria, has documented how PPE requirements, workflow design, and fear of exposure shape the tempo and style of care (Obionu et al. 2021; Holt et al. 2021). This has often resulted in reduced time at the bedside, as well as limited touch and nonverbal reassurance. The cumulative effect is a model of "distant" care in which physical protection for staff and other patients necessarily constrains the affective and relational dimensions of caregiving.

A number of organizations have conducted experiments in order to identify methods that would allow them to mitigate the effects of this enforced separation without compromising the principles of IPC. In the Democratic Republic of Congo, the International Medical Corps, in collaboration with various partners, has undertaken the redesign of Ebola treatment centers. This redesign incorporates the introduction of safe viewing corridors and visiting rooms, allowing families to observe patients through windows or fences. A key aspect of the redesign involves the systematic engagement of Ebola survivors, presumed to be immune, to assist with patient feeding, accompaniment, and advocacy within the high-risk zone, with a particular focus on orphaned or unaccompanied children (Runkle 2021). These measures were implemented with the objective of addressing the prevalent community rumors that perceived these centers as "places where people only went to die" (Richards et al. 2019). The measures aimed to enhance the visibility of care services and to maintain a connection between patients and their families. However, within the context of Ebola and Lassa programs, the prevailing model of hemorrhagic fever care continues to be characterized by a system of enforced separation (Brown and Marí Sáez 2021). Patients

confront a life-threatening illness predominantly in isolation, surrounded by barriers and highly protected staff, while relatives wait anxiously for sporadic updates outside the fence.

In a significant number of African hospital settings, the Ebola/Lassa model of strictly excluding relatives is in marked tension with long-standing norms of family-centered inpatient care. In many regions of sub-Saharan Africa, hospitals have historically relied on family members to function as informal "nurse aides." This practice involves the constant presence of family members, often a mother for a sick child, at the bedside to provide essential care and support, including feeding, bathing, cleaning, basic nursing, and continuous emotional support, which are integral components of daily care (Adebayo et al. 2024). This arrangement is not merely a matter of cultural preference; rather, it constitutes a structural response to chronic workforce shortages and under-resourced nursing services. Qualitative research from Nigeria and Uganda demonstrates that family "attendants" routinely undertake tasks that, in high-income settings, would typically be performed by paid staff. These tasks include bed-making, cleaning up blood and vomit, assisting with toileting, and ensuring nutrition and hydration (Adebayo et al. 2025; Adebayo et al. 2024; Ackers et al. 2024).

Recent hospital-based studies in Nigeria have described informal caregivers as "resident caregivers" who reside in and around the wards. These caregivers organize complex "care mobilities" to procure essential supplies such as food, medicines, linen, and laboratory samples. They also fill critical gaps created by low nurse-to-patient ratios and fragile hospital infrastructure (Adebayo et al. 2025; Adebayo et al. 2024). The caregivers in question are predominantly female relatives, and they are intimately

involved in monitoring symptoms, advocating for patients, and sometimes assisting with quasi-clinical tasks, which renders their presence both indispensable and burdensome (Adebayo et al. 2024). As argued by scholars in the field of family-focused nursing in the World Health Organization (WHO) African region, despite the absence of formal recognition, family involvement is pivotal to ensuring patient safety, continuity of care, and perceived quality of services in African hospitals (Chironda, Jarvis, and Brysiewicz 2023; Adebayo et al. 2024). This demonstrates how the maternal presence at a sick child's bedside is regarded as being integral to the child's welfare and recuperation.

In light of this background, it is challenging to uphold the SOPs that unequivocally prohibit visitors in the context of hemorrhagic fever diseases. The incorporation of conditional family presence has been initiated in certain guidelines. Nigeria's *National Guidelines for Lassa Fever Case Management* explicitly allow that, for neonates and children with Lassa virus disease in designated treatment centers, a caregiver may be permitted to stay with the child, provided the person is thoroughly counseled on infection prevention measures and commenced on ribavirin post-exposure prophylaxis as a high-risk contact (NCDC 2018; Bausch et al. 2010). This cautious accommodation signals a pragmatic shift in approach. Despite the presence of highly lethal outbreaks, local caregiving practices and expectations cannot be entirely suppressed. There is growing acknowledgment in both policy and research that, if adequately protected and supported, family involvement may improve comfort, adherence, and possibly clinical outcomes, while also mitigating the psychosocial harms of enforced separation (Chukwu et al. 2022; Chironda, Jarvis, and Brysiewicz 2023; Adebayo et al. 2024).

At Phebe Hospital in Liberia, the convergence of these two spheres of caregiving manifests in a distinctive manner. Phebe Hospital, which has functioned as a referral center for Lassa fever in Bong County, became the location for an unorthodox experiment in care during recent Lassa outbreaks. In contrast to the conventional Ebola treatment unit model, Phebe's Lassa isolation unit (IU) introduced an innovative approach by opening its doors to mothers as in-ward caretakers for their sick children (and occasionally other relatives). In this setting, mothers were not merely visitors peering through a fence, but active participants in the patient's care inside the Lassa patients' IU. They chose to be admitted in conjunction with their children, devoid of any rudimentary protective equipment, but only equipped with their faith and determination to provide sustenance, hygiene, and emotional support to their ailing children, together with brief instructions from nurses about handwashing and disinfection procedures.

This approach capitalized on the mothers' intimate knowledge and soothing presence, with the objective of humanizing the treatment environment while visibly compromising personal safety. The experience at Phebe Hospital thus stands in stark contrast to the fear-laden imagery typically associated with "no-entry" Ebola or Lassa wards. The institution embodies a synthesis of rigorous biomedical protocols and the ethos of family-centered care, deeply rooted in the local culture. As an ethnographic researcher with a medical background and cognizant of the danger posed by the Lassa virus, it was a startling experience to observe uninfected mothers within a Lassa hot zone actively caring for their children. However, for local healthcare workers, this had gradually become an accepted adaptation in the face of limited staff and the special needs of pediatric patients at Phebe Hospital.

This chapter explores how this integration of mothers as caregivers within a hemorrhagic fever treatment setting alters the landscape of patient care and infection control. By examining the case of Phebe Hospital's Lassa fever IU, the chapter aims to understand the contours of welcoming family caretakers into a space traditionally governed by strict isolation. Drawing on ethnographic fieldwork and the hospital's own protocols, I analyze how this practice challenges the standard outbreak response paradigm and what it means for patients' well-being, family experiences, and trust in the health system. Ultimately, the goal is to highlight the balance (and trade-offs) between adhering to international safety procedures and embracing a more compassionate, culturally consonant model of care during epidemics, thereby setting the stage for rethinking SOPs in future outbreak contexts.

4.2. The Isolation Unit on the Hospital's Margins: An Architecture of Containment

From the main entrance of Phebe Hospital in Bong County, the Lassa IU sits on the left edge of the main building of the hospital, adjacent to another fearful entity: the morgue. To emphasize the proximity of the IU to the morgue, a member of the IU's staff once conveyed to me that "even some time when there's a rotten corpse [in the morgue], the odor comes out and pollutes our place [the IU]." Although I did not witness such an event during my fieldwork, one could imagine how such repugnant occurrences can render the IU feared and repulsive. This liminal location, at the physical and symbolic edge of the hospital complex, and in close proximity to the area designated for the storage of deceased individuals, resonates with the architectural design of highly contagious disease treatment facilities (Christos Lynteris and Poleykett 2018). These facilities are

deliberately positioned at the margins of compounds, with the intention of both isolating potential sources of contagion and creating a separation between the “zones of death” and the rest of the hospital environment (Brown and Marí Sáez 2021).

The physical colocation of the IU and the morgue—at the margin of the hospital building—is not merely cartographic; it symbolizes the IU as a place where care and anticipated death occupy the same architectural frame, underscoring what treatment infrastructures for hemorrhagic fever diseases often feel like for those who approach them. This adjacency matters because isolation units rarely function as neutral clinical spaces for staff, patients, and visitors. They reflect what might be termed a “shadow geography of danger,” where architectural situatedness communicates who and what must be kept apart. In West African hemorrhagic fever histories, treatment spaces have been repeatedly depicted as feared zones (Richards et al. 2019; Brown and Marí Sáez 2021) where care is delivered through distance, barriers, and unfamiliar protections (Gomez-Temesio and Le Marcis 2017), and where ordinary kinship practices such as touching, feeding, washing, and bedside sitting become morally charged and epidemiologically suspect.

The façade of the IU was bounded by an aging iron fence made with single twist wire mesh, partly torn, intended to secure the unit and prevent patients from “escaping” this feared space. The inscription “HOLDING ISOLATION UNIT” in uppercase letters dominates the front of the façade, while the names of the hospital and international funder that renovated the unit appear in smaller type, visually centering containment over care (Fig1). This inscription functions as a public classification that can attach stigma even before any diagnosis is confirmed, echoing how “holding” and “isolation”

became socially potent labels during Ebola responses (Brown and Marí Sáez 2021; Abramowitz et al. 2015). Through the gaps in this barrier, patients who are sufficiently well, and mother caregivers, could be seen walking out to the veranda where they would sit and enjoy fresh air, wash small clothing items or speak with relatives from distance (Fig. 7). Although these activities appeared as forms of ordinary life, they were performed under conditions of surveillance and constraint.

Figure 11: *The Lassa Treatment Unit at Phebe Hospital, known as the Isolation Unit, with a mother caregiver sitting at the veranda.*

This visibility complicates the usual imaginary of hemorrhagic fever units as sealed spaces: the IU is both separated and porous, simultaneously hidden (in access) and exposed (in view). That paradox matters because public health containment depends not only on rules, but on whether people believe that what happens behind the fence is legitimate care rather than abandonment or harm (Brown and Marí Sáez 2021). In outbreak guidance, communication and psychosocial support are often proposed precisely to reduce the distress produced by separation and to mitigate mistrust (WHO 2023, 60; Barbisch, Koenig, and Shih 2015). Here, the fence becomes a material mediator of trust as it allows families to see *something*—a seated woman—while still enforcing distance. The IU thus operates as an interface between biomedical containment and familial obligation, where visibility can soothe fear even as it confirms exclusion.

4.3. Encamped Care and Fenced-Off Lives

In an interview, a Lassa fever survivor recalled his admission to the IU at Phebe Hospital as follows: "… later, they dressed in the PPE, then they put me in the ambulance because I was not able to walk, so they carried me to the back and put me inside the fence before people started taking care of me." The sequence he foregrounds—suit up, transport, carry, enclose, then treat—captures a defining feature of hemorrhagic-fever response in which care is made possible through a spatial and procedural apparatus that first renders the patient governable as a risk object. Fences, barrier tapes, checkpoints, and one-way flows do not merely surround treatment units; they organize movement and access, distinguishing a controlled interior from an exposed exterior and regulating who can cross, when, and under what conditions (Gomez-Temesio and Le Marcis 2017; Brown and Marí Sáez 2021). In this quote, the phrase "inside the fence" underscores enclosure

as an embodied experience rather than an architectural detail; it helps explain why communities have sometimes viewed treatment centers as places of disappearance and death, and why fear can lead to avoidance or delayed presentation even when biomedical care may improve survival (E.T. Richardson et al. 2017; Richards et al. 2019). This observation shows how infrastructures designed to protect life, can also feel like instruments that suspend ordinary social life by transforming clinical care into managed confinement.

Gomez-Temesio and Le Marcis (2017) theorize this convergence of humanitarian care and containment as *mise en camp*—an "encamping" in which epidemic response remakes health infrastructures into camp-like formations at the edge of the social order. Their ethnography of Ebola treatment centers in Guinea shows how the camp form emerges through perimeters, controlled circulation, restricted access, and intensified surveillance, even as clinical labor is being performed. Brown and Marí Sáez (2021) further develop this analysis by demonstrating how separation during the Ebola outbreak was enacted through objects, spaces, and protocols that reshaped trust in intimate, governmental, and therapeutic relationships. The fence simultaneously provides protection and creates a sense of alienation. Where trust is fragile, separation can be perceived as concealment rather than protection, exacerbating the treatment center avoidance dynamics outlined in "The Ebola Suspect's Dilemma" (E.T. Richardson et al. 2017). In this literature, fear is neither irrational nor incidental; it is grounded in experiential logics about what happens behind barriers when communication is restricted and outcomes are uncertain (E.T. Richardson et al. 2017; Richards et al. 2019).

These dynamics are particularly significant when children or adolescents are isolated because separation disrupts the expectation in many African clinical settings that a sick child will be accompanied, observed, and comforted by a parent, typically the mother. Ebola scholarship has demonstrated that restrictive visitation policies can alter the perception of care by preventing bedside care and emotional reassurance. Furthermore, response efforts often falter when they fail to recognize the importance of these factors for families (Brown and Marí Sáez 2021; Wilkinson et al. 2017). This is why operational guidance during the Ebola epidemic explicitly recognized the reputational burden of "isolation," noting that it can prevent admission when people fear dying among strangers in frightening environments rather than with family members (Allen et al. 2015; Shultz et al. 2016). In this regional context, Phebe's isolation unit—fenced off, with restricted access, and remembered through local survival narratives—can be seen as part of a broader post-Ebola attempt to reconcile containment with communicative visibility, even though the unit's architecture continues to prioritize separation as a means of ensuring safety.

At Phebe Hospital, the IU's marginal location beside the morgue intensifies the unit's emotional impact and transforms its boundary-making into a form of infrastructural communication. The hospital landscape does not merely accommodate isolation; it actively shapes the IU as both a clinic and a social judgment. This situatedness helps demonstrate how fear is materialized through placement, fencing, and everyday movement, rather than existing only as a belief. The torn hole in the fence, which staff have reported as an occasional route of patient escape, offers a counterpoint to the apparent solidity of the encampment. It signals the physical exhaustion of outbreak infrastructure and the continuous negotiation of the encampment order by its

inhabitants (Gomez-Temesio and Le Marcis 2017). The breach also reveals how separation can be challenged when experienced as harmful, unjust, or socially heavy and devastating—dynamics that Fairhead (2016) traces back to the longer history of unequal encounters with the state and humanitarian authority in Forest Guinea. In this sense, "escape" is not only a security incident, but also a social diagnosis of the IU's reputation and the perceived weight of fenced-off life.

Taken together, these accounts position Phebe's IU as the hospital's "outside within": a controlled enclave attached to ordinary care yet partially excised from it, where the prospect of treatment is inseparable from the experience of enclosure. What looks like a fence is also a social relation—one that patients and families may endure, reinterpret, or break in their struggle to preserve care, dignity, and proximity under high-risk situations.

4.4. The Long Corridor and the Atmospheric Shift into "Elsewhere"

When moving from the maternity ward inside the main building of Phebe Hospital, the IU is located at the right end of the long corridor running through the pediatrics and surgery wards. As I walked down this corridor toward the unit, I was enveloped in an icy silence, reflecting the unit's isolation—as its name indicates—and its detachment from the hustle and bustle of the other wards filled with parents of bedridden patients coming and going. The IU resembled a mystical, if not haunted, territory where human movement was rare. On many occasions, I mistook other nearby doors for the entrance to the unit as there were no signs indicating its location. The shift toward the IU is thus experienced as a sensory and social thinning, characterized by fewer bodies, fewer voices, and a colder affective register that signals risk without necessarily naming it.

In other words, the shift into the IU identifies an atmosphere produced by low foot traffic, reduced sociality, and the anticipation of risk, all of which contrast sharply with wards where caregivers circulate continuously. This contrast echoes a wider West African hospital reality in which family members—often women—are not occasional visitors but essential providers of bedsiding labor such as feeding, washing, watching, and running errands that keep inpatient care functioning (Bunkley et al. 2024). In settings where such caregiver presence is normative, the IU's quietness can feel uncanny, because it suspends the social infrastructure of care that usually fills hospital space. Ebola IPC guidance, however, rationalizes such suspension as a cornerstone of outbreak control, framing restricted access, controlled movement, and separation as prerequisites for protecting staff and others (WHO 2014a). From an ethnographic perspective, this rationale does not negate the emotional experience of the corridor as a threshold into a feared zone, particularly in a county with a local moral history of Lassa, as recounted through tales of those who survived and those who did not, and the perceived effects of the IU on the body.

The IU's nurses' station, unlike other departments where the station opens directly onto ward space, is a large, enclosed room set back from the door, with registers and files on a central table, labeled cabinets of PPE, a malfunctioning bedside monitor screen that used to enable surveillance of Lassa patients hospitalized in the IU, and a handwashing station. The room also serves as a changing area where staff, and occasionally researchers like me, don PPE before entering the IU proper, displaying an assemblage of technology, paperwork, and hygiene infrastructure. Adjacent to this room was the proper isolation room where Lassa patients were admitted. The entrance door to this room, considered a highly infectious area, was always closed and only accessible to

staff and authorized persons. To the left of this was another door that served as the exit from the patient admission room via a doffing area. This spatial design—closed door into the admission room, separate exit route, and a doffing area where a hygienist assists with disinfection with chlorine spray—mirrors the logic of a one-way circuit from donning to doffing meant to prevent cross-contamination. This layout echoes World Health Organization (WHO) guidance on VHF units, which recommends unidirectional staff movement, separate entry and exit points for high-risk areas, and designated undressing spaces supervised by trained hygienists (WHO 2015b, 2014a).

Yet despite this carefully designed infection-prevention circuit, the IU seemed to be strikingly under-occupied in terms of dedicated personnel. On repeated visits to the nurses' station, it was common to find no staff present, both when no Lassa patients were admitted and even when patients were in the unit. IU nurses routinely worked across multiple wards, only returning to the isolation room for medication rounds or essential procedures. In justifying this rotational labor, a staff member mentioned that "you will not find patients here [in the IU] constantly, that's why you will find me on the operating theater where I work too. If there is no patient, I work as a scrub nurse in the operating room."

This observation aligns with evaluations of Lassa fever treatment centers in Nigeria, which highlight chronic shortages of dedicated staff, reliance on rotating hospital personnel, and thin presence in high-risk zones outside core clinical tasks (Holt et al. 2021; Obionu et al. 2021). Such cross-posting poses nosocomial risks as staff who move between Lassa isolation rooms and general wards may inadvertently transfer pathogens, especially where donning/doffing supervision and environmental cleaning are

inconsistent (Obionu et al. 2021). Phebe Hospital's IU thus exemplifies a broader tension in endemic Lassa settings where architectural and procedural design follow high-consequence infectious disease (HCID) principles, but everyday staffing patterns reflect the realities of under-resourced hospitals that cannot afford fully segregated teams.

4.5. Donning PPE and Crossing the Threshold of the IU

While I was in the IU nurses' station, I noticed the presence of a caregiver in the IU when I overheard this person asking the nurses about the medication of her hospitalized son, a Lassa patient. I was initially astonished by what I had just discovered, given that, to my knowledge, the SOPs designed to prevent and control infection strictly prohibit healthy individuals from entering HCID treatment units such as those for Lassa fever (WHO 2014b). When I asked the nurses about this situation, they told me that parents—especially mothers—systematically refuse to let their children be admitted alone, particularly when it comes to children and adolescent Lassa patients. They argued that the mothers' attitude was mostly due to rumors that the IU was a demonic place where miraculous deaths had occurred previously, as discussed in my preceding chapter. This perception fuels deep mistrust, compelling parents to accompany their children in the IU in order to witness the treatment process and provide essential care such as feeding and bathing, as well as psychosocial support.

The presence of a healthy individual in the IU highlighted a critical gap between rigid biosafety protocols and the imperative of trust-building in high-stakes settings (Brown and Marí Sáez 2021; Nuriddin et al. 2018). Recent literature critiques the securitization of epidemic response, arguing that overly restrictive visitor policies and

militarized control measures can exacerbate public fear and alienation, thereby undermining outbreak control (Eba 2014; Boland, Mayhew, and Balabanova 2023; Heymann et al. 2015). At Phebe Hospital's Lassa fever IU, my observation aligns with findings that during the 2013–2016 Ebola outbreak, families' inability to witness care or perform burial rites for loved ones significantly eroded trust in health systems and fueled community resistance, which included secret burials, attacks on burial teams, and avoidance of treatment centers (Lee-Kwan et al. 2017; Nuriddin et al. 2018; Lyons et al. 2021; Richards et al. 2019). The mother's presence, therefore, was not merely a breach of protocol but a grassroots strategy to verify safety and reclaim agency in a context of terrifying rumors and institutional opacity, echoing broader patterns in which families seek direct access to patients and burial spaces to counter fear of mistreatment or disappearance (Richards et al. 2019; Brown and Marí Sáez 2021).

After noticing the presence of the mother caregiver in the IU, I was eager to enter and observe how she was caring for her son with Lassa fever, and how she felt about being in the most feared treatment unit of Phebe Hospital. When the time came for the nurse to administer the medication to the patient in the IU, I decided to accompany him to see the patient and his mother. Before entering, the nurse and I put on the necessary PPE in accordance with standard precautions for attending to a patient confirmed to have hemorrhagic fever disease. Full PPE, provided by the partner university's ongoing Lassa research project, was available at the IU. According to one of the nurses working there, this PPE was never out of stock, as the partner university ensured regular replenishment. The PPE comprises a scrub suit, a face shield, a reusable apron, a hood, a Tyvek suit, and boots. This set of PPE matches what mixed-methods research from Nigerian Lassa

centers describes as “Ebola-level” protection, exceeding national minimums that often specify gowns, gloves, mask, and eye protection (Holt et al. 2021).

Under close supervision by the nurse and the hygienist, I donned each item of the PPE one after another, following WHO and national protocols which emphasize buddy systems and verbal checklists to minimize errors when donning and doffing (WHO 2014a; Phan et al. 2019). Once the hygienist had dressed us meticulously and confirmed that all our body parts were covered, we took some pictures before entering the unit. This was my first time wearing PPE and entering a hemorrhagic disease treatment unit, and the moment carried the charged feeling of a threshold where my body was readjusted before crossing into the “high-risk” interior. Although I was slightly nervous, I trusted the PPE and reminded myself that the patient we were going to see was not in a critical condition, as there had been no direct exposure to bodily fluids. Above all, I told myself that if a healthy person had remained unharmed while staying there without protection, it would mean that I was at less risk with all my PPE. I confidently followed the nurse in.

Emotionally, my experience involved a mix of fear and calculated reassurance, marked by apprehension about entering a hemorrhagic fever treatment space for the first time, counterbalanced by trust in the PPE and the knowledge that the patient was clinically stable with no anticipated direct exposure to body fluids. This mirrors frontline accounts from Ebola and Lassa units where staff describe PPE as both protective armor and a source of unease, intensifying heat, fatigue, and feelings of distance from patients (Brown and Marí Sáez 2021; Bertuol et al. 2024; Pallister-Wilkins 2018). From an atmospheric perspective, PPE helps constitute the “viral atmosphere” of the IU as it visually marks the high-risk zone, shapes how patients perceive medical caregivers, and

contributes to the sense of boundary between inside and outside (B. Anderson 2014; Bertuol et al. 2024; Brown and Marí Sáez 2021).

In Pallister-Wilkins's account of humanitarian governance of Ebola, PPE operates not merely as equipment but as a *mediating device* that makes intervention possible while simultaneously translating a lethal epidemiological problem into a manageable, procedural one. Care thus becomes imaginable because it is rendered governable through steps, supervision, and the promise of a barrier (Pallister-Wilkins 2018). Moreover, the buddy system monitoring during PPE donning serves not only as a safety mechanism, but also as an epistemic technique that externalizes vigilance and redistributes responsibility from the individual worker to a scripted relationship of mutual monitoring, thereby disciplining attention to even the smallest bodily exposures. In this sense, the hygienist's meticulousness—checking cuffs, seams, hood placement—was not simply technical care for our safety; it was the enactment of a moral order in which "correctness" becomes a condition for legitimate presence in the isolation space. Pallister-Wilkins shows how PPE, because it must be *used correctly* to work, intensifies this moralization of technique, making failures of protection legible as failures of discipline and training, and thereby locating risk in the body-practices of the wearer (Pallister-Wilkins 2018).

When entry into the IU becomes necessary, PPE is experienced as both protection and transformation. The layering—scrubs, a face shield, a reusable apron, a hood, a Tyvek suit, and boots—does not simply cover the body; it transforms the wearer into a specific type of clinical practitioner whose safety depends on the correct sequence and supervision of donning PPE. This logic is mirrored in the Nigerian Centre for Disease

Control (NCDC) guidelines which emphasize that donning and doffing require specific training and should occur under constant supervision, underscoring that PPE is not just equipment but a disciplined practice (NCDC 2018, 36).

Biomedical literatures on Ebola PPE underscore the same point from another angle; protective ensembles are designed to reduce occupational exposure in high-risk settings, yet their protective value hinges on meticulous adherence to technique, especially at the vulnerable moments of removal (Phan et al. 2019; Fischer II, Weber, and Wohl 2015). Anthropological accounts add that PPE's transformative force is also semiotic. During Ebola, PPE became the most visible marker of risk work, simultaneously signaling professional courage, danger, and the need for separation. This image thus shaped how communities interpreted treatment centers and the people moving within them (Brown and Marí Sáez 2021; Gerlach 2019). In press and public imaginaries, the "hazmat" suit often stands in for biosecurity itself. In this way, it offers the promise of containment, which can reassure distant publics while also othering the outbreak scene and intensifying the sense that the treatment unit is an exceptional—and potentially lethal—space (Gerlach 2019).

Put differently, PPE is not a neutral shield in this transformation; it is, in Pallister-Wilkins's account, a "barrier device" that mediates between intimate care and global biosecurity, enabling touch and proximity only by converting them into tightly controlled forms of circulation. Pallister-Wilkins (2018) further argues that PPE works because it is a selectively permeable "second skin" that blocks "bad" circulation (viral-laden bodily fluids) while permitting "good" circulation (breathing, movement, and the minimal conditions necessary for the wearer to survive). At the same time, PPE can thicken moral

distance; it muffles voice, obscures facial expression, and disrupts the ordinary relational cues through which care is communicated. This sometimes requires compensatory practices such as gestures, tone, or identification methods like PPE Portraits (see Brown-Johnson et al. 2020) to reestablish patient-provider connection. Seen from this perspective, the transformation is twofold: the wearer is protected but becomes harder to recognize as a familiar caregiver, and the encounter risks becoming procedure-focused rather than person-centered.

4.6. Selective PPE, Resource Logics, and Experiential Epidemiology

At Phebe Hospital, a striking divergence from protocol emerged when nurses occasionally entered the IU without PPE if admitted patients appeared well and exhibited no obvious symptoms. They justified this attitude by saying that wearing PPE for every visit is a "waste of resources." This approach resembles the broader pattern observed in post-Ebola settings where chronic supply chain anxieties and practical constraints lead workers to ration protective measures, even while endorsing IPC in principle (Ratnayake et al. 2016). However, at Phebe, the rationale is not only scarcity in the narrow sense, because PPE provision was consistently supported through an external project supply. Rather, "waste" also refers to the disadvantages of PPE, such as the time it takes to put on and take off, the discomfort of working inside impermeable layers, and how PPE can slow down care. These issues are widely described in studies of PPE experience (Ratnayake et al. 2016; Hoernke et al. 2021).

Crucially, the nurses' argument also draws on an "experiential epidemiology." They noted that mothers who stayed in the IU—without any specific protection—with their sick children during treatment "never contracted the Lassa virus," and from this they

infer that person-to-person transmission is rare. This emic risk model, built from observation, memory, and selective evidence, partially aligns with biomedical accounts which emphasize that Lassa is primarily zoonotic and that person-to-person transmission occurs to a much lesser extent, mainly through direct contact with bodily fluids (WHO 2024). However, biomedical guidance also emphasizes that inconsistent IPC can lead to healthcare-associated transmission and that contact with bodily fluids and contaminated equipment can spread infection in clinical settings (WHO 2024; CDC 2025).

Studies of nosocomial clusters among healthcare workers emphasize the "high price" of lapses in IPC, since clinical stability can deteriorate rapidly and exposure risks are not always apparent (Saleh et al. 2020; Dan-Nwafor et al. 2019). The issue is not that nurses are simply "wrong," but that they work with a pragmatic approach: they interpret the IU based on what they can see—no bleeding, no vomiting, a stable child, and a healthy mother. By doing this, they convert the absence of observed infection into proof of safety. This produces a local justification for selective protocol adherence, which can be interpreted as a negotiation between professional duty, bodily endurance, and institutional memory.

4.7. Mothers at the Bedside: Family Caregiving in a High-Risk Room

When we entered the IU, we met the patient, a fourteen-year-old boy who was visibly well and seemingly not scared of us in our PPE. His mother, who appeared to be in her late thirties or early forties, was sitting in a chair by his bed, dressed ordinarily without any protective gear. She was closely monitoring her son and our interactions with him. I first felt embarrassed given that we, as healthcare professionals, were fully protected by

our PPE to enter the room, whereas the mother, who had more frequent and thorough interactions with the patient, was continuously staying there without any protective equipment. That embarrassment, beyond being only personal, was an ethnographic clue to how “high consequence” infrastructures distribute safety unevenly, marking some bodies as protectable and others as naturally exposable through kinship obligation.

Figure 12: *A mother in the IU, carefully watching a nurse administering medicines to her child (Photo by Mark Sumo).*

In outbreak guidance, PPE is presented as a technical barrier that prevents contamination and breaks chains of transmission. Its proper use is considered a skill that is developed through training, supervision, and repetition; it is not merely an item of clothing. The WHO's guidance on PPE for filovirus disease emphasizes correct selection, careful sequences of donning and doffing, and the importance of trained observation to reduce errors, thus making "safety" a procedural achievement (WHO 2014b). Similar logics run through national Lassa fever case management guidance, where PPE use is tied to the broader discipline of IPC, and where the "work" of safety is embedded in institutional routines rather than left to individual improvisation (NCDC 2018). Yet what my vignette conveys here is that the IU is also a social arena in which clinical protection is enacted through visible performances such as hoods, face shields, and suits, while maternal presence is enacted through ordinary clothing, bare hands, and bedside attention.

In this context, PPE becomes a technology that creates boundaries, separating the figure of the trained outbreak worker from the figure of the "caretaker," even when the caretaker's exposure is far more sustained. Brown and Marí Sáez (2021)'s analysis of Ebola "separations" helps to explain what is at stake here: barriers and regulated distance not only manage pathogens, but also reorganize intimacy, trust, and the moral expectation that care involves proximity. The IU is not simply a room where infection risk is managed; it is also a place where the meaning of care is negotiated through considerations such as who can touch whom, who must wear protective clothing, and who is expected to accept uncertainty as part of love. This is why my initial sensation highlights the IU as a place where biosecurity rationalities clash with the everyday moral

obligation of motherhood, and where “risk” is experienced as an asymmetrical relationship rather than a neutral probability.

Without saying a word, the mother paid close attention to what we were carrying and what medication we were giving to her son. When we asked the patient how he was feeling that day, he promptly replied that he was feeling more comfortable as his stomach pain had gone. His prompt answer suggested that he was eager to recover and leave this stressful place. He recounted that his illness began with a stomachache three weeks ago, as his grandmother had told me in previous conversations. He also said that he did not know how he had got the disease or how one could get it. In the week before he was admitted, a sixteen-year-old girl from Suakoko (the same village he came from), whose mother also stayed by her as caregiver in the IU, survived Lassa fever after ten days of treatment in the same IU. When I asked him if he knew the girl and if they were friends or neighbors, he said that he did not know her. While I was talking to the patient, the nurse was preparing his ribavirin injection for intravenous infusion.

Here, the mother’s silent attention resembles a parallel clinical practice: she observes, interprets, and evaluates the unfolding scene, providing an informal assessment of the quality of care provided by the institution in real time. In many African hospital settings, relatives performing such tasks at the bedside is not exceptional, but structural. It emerges where staffing shortages and resource constraints make family members central to washing, feeding, mobilizing, and comforting patients. Hoffman and her colleagues (2012), writing about Malawian “hospital guardians,” demonstrate how the presence of relatives becomes an informal extension of the ward’s labor force, often performing basic care that enables biomedical treatment to be effective. More recent

reviews and syntheses similarly emphasize that informal caregivers in low- and middle-income settings do not simply “support” clinical care; they frequently constitute the hidden infrastructure of care, while also carrying heavy physical and emotional burdens and navigating unclear authority in clinical spaces (Hogan et al. 2022; Bunkley et al. 2024). My ethnographic contribution to this debate is the paradox of importing this broader African hospital norm into a space officially defined by isolation, where the logic of outbreak control would seem to demand separation rather than accompaniment.

The boy’s uncertainty about how he became infected and his mother’s efforts to emphasize cleanliness, covered food, and an absence of rats show that the IU is a place where the cause of the illness is debated rather than settled. This debate is important because it shapes how danger is perceived. If infection is believed to originate from household rodents, then a mother who has already experienced the initial stages of the illness at home may view the IU as merely an extension of what she has already endured. However, if infection is believed to spread easily between humans, then the mother’s proximity could be seen as reckless exposure. In this way, the bedside becomes a small epistemic theater where etiological narratives, beliefs, rumors, and clinical protocols converge, and where the mother’s watching can be interpreted as a means of fostering trust through visibility rather than distance. Reflections on community engagement during Ebola by Wilkinson and colleagues (2017) are helpful here because they demonstrate that acceptance of response infrastructures often depends on whether local realities and moral concerns, especially those relating to family and care, are recognized rather than overwritten by technical messaging.

4.8. Care Negotiation, Faith, and the Softening of Isolation

While the nurse was giving the patient his medicine, I turned to the mother (his carer) for a conversation. She mentioned to me that she had heard of Lassa fever before, as two people from her church had contracted Lassa fever; one had survived and one had died. Regarding her son, she expressed her wonder at how he had become infected with Lassa. She argued that she always covers food in the house and keeps her house clean, highlighting that there were no rats in the house. She said that she felt bad when her son was diagnosed with Lassa fever, but that she believes in the medical team and in God and has been praying for her son. I could see a Bible on the table, which testified to her reliance on prayer. She mentioned that she felt comfortable being in the IU with her son so that "he wouldn't feel lonely or abandoned by his parents." She also felt reassured in the IU because she could care for her son and closely monitor his treatment, which was completely different to what she had heard about the IU:

> "We heard that when someone gets in here [the IU], it's difficult for the person to make it [survive]; even our pastor's wife came here, she did not make it [survive], she died. So, I was too scared for my son when they said it was Lassa, but as a believer, I kept praying for him. I also told them [the medical team] that I wanted to be with him, and as I see things in here myself, I understand that there is nothing bad here, they're just trying to protect themselves by wearing this suit and treat him."

This passage compounds several things at once: It links the IU to a collective memory of death, frames faith as a coping mechanism, and recodes the PPE suit from a symbol of terror into a visible sign of protective professionalism. In that recoding, fear is

not erased but reworked through witnessing, where “seeing things in here myself” becomes an antidote to rumors of disappearance. The mother’s desire to prevent loneliness and abandonment resonates strongly with scholarship on Ebola treatment units as spaces where separation can be experienced as moral rupture, particularly when families cannot touch, comfort, or even see the patient (Brown and Marí Sáez 2021). In their article, “The Ebola Suspect’s Dilemma,” Richardson and his colleagues (2017) capture how the prospect of being routed into a feared treatment space can generate delay and avoidance, because admission may feel like entering a zone where ordinary social care is suspended.

In Phebe Hospital’s IU, my observation offers a partial solution to that dilemma. The IU’s legitimacy is not only rebuilt through biomedical efficacy, but also through authorized continuity of kinship within the high-risk room. This continuity is not simply emotional; it is practical, because mothers feed, clean, and observe symptoms, sometimes noticing deterioration between scheduled staff visits. Their labor compensates for the infrequent staffing patterns that are often characteristic of outbreak units. In this way, mothers’ admission functions as a “softening” of isolation—an attempt to balance containment and care by maintaining one form of physical contact under conditions that are otherwise designed to limit it. When considered alongside broader work on “hospital guardians,” Phebe’s IU can be seen as an extreme example of a more general pattern where formal health systems rely on relatives’ labor, even when this sits uncomfortably with official standards (Hoffman et al. 2012). Yet the IU adds a distinctive moral intensity because the unit’s association with death amplifies what is at stake in accompaniment. The mother is not only assisting with tasks; she is also rejecting abandonment as a form of care. This is why parental involvement should not be treated

as a deviation from SOPs to be explained away, but rather as a negotiated compromise between two ethical systems: biosecurity's imperative to separate and kinship's imperative to stay.

When asked if she was not scared of becoming infected despite not being protected like us, the mother replied with a firm "no," mentioning that she regularly washed her hands as recommended by the medical team. Besides the bed, there was a hand washing kit installed (a closed bucket with a tap on top, with another open bucket underneath it to receive hand washing water and a 500 ml bottle of soap liquid) but I did not check whether the bucket was filled with water. Furthermore, she emphasized that above all, the patient was her son and that she had no fear of becoming infected because it was her duty to care for him. Like her, other mothers who entered the IU as caregivers underscored this duty to care for their children and their fear of letting them be admitted alone in a place rumored to be haunted and dangerous. In fact, stress, fear of dying, and a feeling of imprisonment in the IU were reported in interviews with adult survivors who had undergone the ten-day treatment in the IU.

This dense cluster of claims about risk, duty, and infrastructure invites us to consider handwashing not merely as IPC compliance but as a moral practice that enables mothers to demonstrate "good motherhood" in terms of clinical safety. It also draws attention to the fragility of infrastructure: while the bucket system is visible, its efficacy depends on water and soap availability and maintenance. This reality reminds us that outbreak protocols often presuppose stable material conditions which are not always present in rural hospitals. Such fragility is important because it shapes how risk is evaluated and distributed. If the ward can only intermittently maintain "ideal" IPC,

practice will then tend toward what seems feasible and consistent with local moral expectations.

The staff's willingness to admit mothers to the IU and their confession that they might not "let their [own] children in there alone" illustrate how clinicians inhabit this moral field themselves, rather than standing outside it as mere enforcers of protocol. One of them once said: "to be honest with you, myself, I may not have the patience to really feel so brave to let my child in there alone [the IU]." This confession shows that "protocol" is not always the highest normative order in practice, as clinicians also weigh reputational risk, the psychology of children, and the known limited staff presence. In more general literature on hospital caregiving, the presence of relatives is often defended through arguments about comfort, vigilance, and labor substitution, even though concerns are raised about burden, role confusion, and inequity (Determeijer et al. 2024). What is distinctive in Phebe's Lassa setting is that the labor substitution occurs inside a space officially defined as a containment device, which makes kinship care both clinically useful and epidemiologically fraught. This fraughtness is precisely where this chapter focuses its analysis by showing how the IU's social acceptability is coproduced by caretakers and staff through a pragmatic ethics of "staying with," even when this ethics sits in tension with standardized visions of isolation.

4.9. The Isolation Unit's Aftermath for Mothers

Given the generalized view that mothers admitted alongside their children were discharged unharmed, my ethnographic curiosity shifted from the drama of entry to the quieter politics of exit, leading me to ask the following question: what precisely is done for mother caregivers in terms of prevention once the ten-day treatment period ends and

the IU releases people back into everyday life? At Phebe, the IU's staff described a pragmatic, low-tech post-discharge approach: they take mothers' temperatures and conduct brief clinical assessments to check for any suspicious symptoms. They also instruct the mothers to return immediately if they notice any symptoms suggestive of Lassa fever. This practice is important because it shows how "care negotiation" continues beyond the high-risk room into a fragile aftercare regime where surveillance is interpersonal and episodic rather than based on protocols. This approach is similar to contact monitoring paradigms in hemorrhagic fever control—watch closely and act early—yet it also depends on infrastructures that are often lacking in rural settings, such as the capacity to return promptly, the ability to interpret ambiguous symptoms, and the confidence that seeking care will not result in stigma or renewed confinement (WHO 2024).

In practice, asking mothers to self-monitor and re-present to the hospital positions them as both subjects and agents of surveillance, extending the IU's governance into the domestic sphere without equipping them with the same protections or clinical authority afforded to staff. Here, we observe that the "softening of isolation" has a temporal counterpart: accompaniment during admission is followed by a loosely structured discharge, which tacitly treats maternal exposure as low-risk, while also allowing for rapid reclassification should symptoms appear.

Analytically, the contrast with Nigeria is productive because it shows that endemic settings do not simply implement the same Lassa logic; rather, they operationalize risk and responsibility differently. Nigeria's national Lassa fever case management guidelines explicitly include a section on post-exposure prophylaxis (PEP)

with ribavirin, together with PCR testing for Lassa fever. This section emphasizes that PEP decisions should be made on a case-by-case basis, targeting high-risk exposures and including counseling and twenty-one-day monitoring (NCDC 2018, 43). This codified option for pharmacological prophylaxis sits alongside a contested evidence base. Retrospective follow-up from the 2004 outbreak in Sierra Leone documented the prescription of oral ribavirin PEP to family members and some healthcare workers after direct contact without PPE, while also highlighting challenges with adherence and side effects (Hadi et al. 2010). Similarly, experience reports from Nigeria describe the use of oral ribavirin PEP among contacts and examine its feasibility under outbreak conditions (Isa et al. 2016).

However, regional and international risk assessments have repeatedly noted that the evidence supporting the use of ribavirin for Lassa fever PEP is limited, and recommendations tend to restrict its use to "definitive high-risk exposures" following a risk-benefit analysis—especially given the toxicity and teratogenic concerns associated with ribavirin (Lehmann et al. 2017; ECDC 2016). More broadly, contemporary syntheses and WHO guidance emphasize ongoing uncertainties regarding the efficacy of ribavirin and the most effective treatment regimens, underscoring the importance of exercising caution when considering its use in prophylaxis as a routine practice (Salam et al. 2022; WHO 2024).

When viewed through this comparative lens, the question is not just whether Phebe should adopt a Nigerian-style PEP, but also how a subregional harmonization effort could align protocols with the realities revealed by my ethnography: mothers are authorized to enter the IU as caretakers, but their post-discharge protection is largely

reduced to temperature checks, brief assessments, and advice to return. A harmonized approach would likely begin with shared risk stratification (what constitutes high-risk exposure for a bedside caregiver in a pediatric IU?), coupled with standardized twenty-one-day follow-up and clear pathways for rapid evaluation, while allowing for context-specific decisions about PEP in cases of definitive, high-risk exposure (ECDC 2016; NCDC 2018).

More importantly, such harmonization should address the ethical imbalance at the core of my observation. If systems depend on mothers' constant presence to stabilize children's care and reduce abandonment, post-discharge programs should not silently shift responsibility onto mothers without providing robust counseling, practical return plans, and, when appropriate, access to evidence-based preventive options. In other words, protocol review should not only be technical housekeeping; it should decide whether parental obligation remains an informal safety liability or becomes an acknowledged component of pediatric Lassa care, supported by shared standards, transparent risk communication, and equitable protection.

4.10. Uncertainties About Human-to-Human Transmission of the Lassa Virus

From general observation and experience, many of my informants—whether they were healthcare workers or parents of children who had previously had Lassa fever—reported that close contact did not generally result in transmission of the virus to the children's carers. This observation has subsequently led to uncertainty about human-to-human transmission of the Lassa virus, thus encouraging parental involvement in caring

for their children who are Lassa patients in the IU at Phebe Hospital. This concern was raised in a conversation with a nurse in a different ward of the hospital as follows:

> "My concern with Lassa fever is that most of the time, close contacts of LF cases do not get the disease despite that they had manipulated the patients' fluids such as vomiting without any precaution. This is something I do not understand about Lassa fever."

When I asked this nurse what she thought could be causing this phenomenon, she replied, with uncertainty, that there might be "other species of the virus developing," emphasizing that she did not know the real cause. Similarly, another staff member questioned whether there had been a mutation in the Lassa virus, given the low incidence of human-to-human transmission and the changes in the symptoms of the disease, which, according to this informant, have become more and more atypical. In the face of this low incidence of human-to-human transmission of the virus, this informant suggests that the protocols of the disease management in the IU should be reviewed in order to officially consider the involvement of parents, especially mothers, in the care of admitted children.

Read literally, these statements are about virology, but ethnographically they are also about how experiential evidence becomes a practical epidemiology that can authorize deviation from SOPs. According to official global guidance, Lassa virus is primarily transmitted via rodent-to-human routes, such as exposure to food or household items contaminated with rodent urine or feces. Person-to-person transmission is also possible, but is usually associated with exposure to bodily fluids, contaminated equipment, or unsafe care in clinical settings (WHO 2024). This possible but limited

characterization creates a conceptual space in which frontline staff can interpret the scarcity of obvious secondary cases as confirmation that strict PPE is sometimes unnecessary and that mothers can be admitted as carers, particularly when patients appear clinically well and are not visibly bleeding. Such practice can be interpreted as "calibrated protection"; that is, an adjustment based on repeated observations rather than abstract protocol.

However, this local epidemiology sits uneasily alongside the institutional memory of outbreaks and occupational infections because healthcare settings are precisely where "rare" human-to-human transmission can have the most serious consequences. Dwalu and colleagues (2024) documented healthcare worker infections during the 2023 outbreaks in Liberia, including in Bong County, where healthcare workers were among the confirmed cases. During my fieldwork at Phebe, interviews with healthcare workers who had survived Lassa fever, as well as with relatives of those who had died, revealed that some of them had interacted closely with each other in residential areas and at the hospital where they worked, further complicating the prevailing empirical observation at Phebe.

The crux of my analytical dilemma is that the same environment which generates confidence through repeated non-transmission (mothers do not fall ill) also contains reminders that transmission can and does occur, exacting a high price at times. This account shows that protocol drift is not ignorance, but rather a pragmatic response to scarcity, workload, and inconsistent experiential evidence. It also demonstrates how this pragmatism can be undermined by abrupt outbreak events that reinstate the logic of strict IPC. In effect, the IU becomes a laboratory of uncertainty, where staff and mothers

coproduce workable rules that remain vulnerable to the epidemiological shock of documented clusters.

The question of "which route is most consistent?" further complicates the caregiving settlement because actors may not disagree about transmission in general but rather emphasize different pathways that they perceive as significant. The WHO's summary guidance highlights rodent exposure as the dominant route (WHO 2024), which aligns with many local accounts that treat rodent-to-human transmission as faster and more predictable than direct human-to-human spread through casual contact. The analysis of the 2022–2023 outbreak in Liberia highlights the importance of rodent ecologies and household contamination in everyday Lassa epidemiology, as evidenced by reported exposures and risk histories (Dwalu, Tweya, et al. 2024). This evidence reinforces the plausibility of community claims that "rats" are the primary driver, even when individuals deny seeing them.

Alongside this narrative, sexual transmission also emerged as a meaningful possibility in local observations at Phebe. Various informants reported concrete examples of healthcare workers and other patients whose partners were admitted within weeks of their discharge. In an interview, a healthcare worker admitted that his partner had contracted Lassa fever just weeks after his own recovery. Although he did not explicitly state that she could have caught it from him, he claimed that he had not been informed that the virus could be transmitted sexually at the time of his discharge. Here, the biomedical literature plays an important role in bridging the gap between experiential claims and virological evidence. Although documented cases of sexual transmission are not considered a dominant factor in standard outbreak narratives, studies have shown

that the infectious Lassa virus can persist in seminal fluid for months after recovery. Viable virus has also been isolated from semen samples over extended periods (Thielebein et al. 2022).

Considering rodent-to-human transmission to be the most prevailing Lassa infection route could be seen as a social attempt to legitimize parental involvement in care in the IU by undermining direct human contact, such as that between a mother and her child suffering from Lassa fever, as a source of transmission. This is important for caregiving because it changes how mothers interpret their own exposure. If the main risk is rodents, a mother may feel that she has already faced the main risk at home and can therefore safely remain with her child in the IU. However, if the main risk is bodily fluids in clinical care, her unprotected presence becomes harder to justify. In this sense, competing etiologies are not just background beliefs; they actively influence the division of labor between staff and mothers, including who is permitted to enter without PPE and whose risk is normalized as "duty." The documented healthcare worker infections in 2023, together with the ongoing plausibility of the rodent and sexual transmission routes, suggest that the real problem is not choosing one transmission route, but living amid a plural epidemiology where different transmission routes dominate at different times and on different scales.

4.11. Conclusion

This chapter has traced how care for patients with Lassa fever at Phebe Hospital's IU is organized at the intersection of architecture, protocol, and parental obligation. The IU's location on the hospital's margins—near the morgue and behind a fence—does more than separate pathogens from people; it creates an "outside within" that reshapes

clinical life and social meaning. Barriers, signage, and controlled thresholds translate biomedical uncertainty into a lived geography of danger, while breaches and reported escapes demonstrate that containment involves an ongoing process of maintenance and contestation. In this sense, the IU resonates with the "encamped" formations described in Ebola response, where care and containment converge through perimeters, checkpoints, and regulated flows (Gomez-Temesio and Le Marcis 2017). Yet this chapter also demonstrates that such infrastructures do not automatically generate legitimacy. When "going inside" is perceived as disappearing behind barriers, fear and delay can become rational responses to uncertainty (E.T. Richardson et al. 2017; Richards et al. 2019). The atmospheric shift into "elsewhere" experienced in the corridor to the IU, marked by silence, distance, and constrained movement, thus becomes part of how patients and families interpret both the promise and threat of treatment.

PPE practices reveal a second axis of negotiation. Donning PPE under supervision turns safe entry into a threshold rite, establishing clinicians as authorized bodies who can cross into the high-risk room (WHO 2014a). At the same time, selective PPE use—entering without full protection when patients appear well—shows how staff recalibrate risk through experience, workload, and resource logics. This experiential epidemiology is strengthened by repeated observations that mothers who remain continuously at the bedside do not fall ill, and by local narratives that view rodent-to-human transmission as more consistent than casual human-to-human spread (WHO, 2024). Accounts of sexual transmission also circulate, cohering with biomedical evidence that Lassa virus can persist in semen for prolonged periods even if this route is not the dominant driver (Thielebein et al. 2022). However, the 2023 nosocomial clusters involving hospital workers underscore the limits of reassurance: transmission that appears "rare" can

become visible abruptly and with severe consequences, especially when IPC practices drift (Dan-Nwafor et al. 2019). The IU therefore becomes a space where the boundary between a “reasonable shortcut” and a catastrophic lapse is difficult to discern in advance, particularly when risk is inferred from appearance.

If the architecture and PPE stage containment, then the admission of mothers as caretakers stages the chapter’s central argument: that protocols are reworked through parental obligation. The bedside vignette illustrates the emotional labor of maternal presence (preventing loneliness and abandonment), the epistemic labor of witnessing care to counter rumor, and the practical labor of feeding, cleaning, and monitoring between staff entries. In many African hospitals, such family-based care is integral to the infrastructure, compensating for staffing constraints while placing significant burdens on women in particular (Adebayo et al. 2024; Bunkley et al. 2024). What makes the analysis of the Phebe case stand out is that this long-standing practice is relocated to a high-consequence setting, where kinship care is both clinically beneficial and epidemiologically challenging. Staff reflections such as “I may not… let my child in there alone” show that clinical reasoning is intertwined with kinship narratives, while faith serves as a coping mechanism that enables families to endure uncertainty and recode PPE from a source of terror to a means of professional self-protection.

It is not possible for a critical conclusion to simply correct local understandings of transmission. Instead, it demonstrates how uncertainty can be productive by authorizing maternal accompaniment, legitimizing PPE shortcuts as a rational use of resources, and motivating staff to call for revisions to SOPs that recognize parents’ roles. However, recognition must not romanticize kinship care; it must address unequal

protection, fragile hand hygiene infrastructures, and the possibility that rare transmission only becomes apparent too late. A context-sensitive pathway would formalize caregiver roles through induction (hand hygiene, safe contact, and waste handling), provide appropriate protection when necessary, and establish trusted channels for observing care without necessitating dangerous proximity. It would also integrate plural understandings of transmission—rodent ecologies, sexual persistence, and episodic nosocomial spread—into counseling and discharge guidance (WHO 2024). Ultimately, the chapter demonstrates that outbreak standards are not simply implemented or resisted; rather, they are continuously reconfigured through maternal fear, staff fatigue, infrastructural constraints, and the intermittent violence of epidemic events.

Conclusion

This dissertation has argued that Lassa fever in Bong County is best understood not simply as a biomedical event unfolding within a pre-existing ecology, but as a historically layered condition assembled through spatial designations, biomedical research infrastructures, and the everyday labor of care. The West African region has long been imagined and governed through a cartographic sensibility of pathological risk, in which space is made legible as a gradient of danger and promise, and where intervention becomes thinkable through spatial categories that travel easily across institutions and reports. The dissertation traced how "endemic zones," "hotspots," and "belts" are not neutral descriptors but classificatory technologies that distribute attention and obligation, turning the region into both an object of concern and a reservoir of biomedical potential. In Liberia, and especially around Phebe Hospital, these spatial forms are imbued with lived experience. They become entrenched in the gates and triage routines, the rhythms of recurrent research visits, the circulation of rumors and refusals, and the reputational burden of being recognized as a place from which cases regularly emerge. The dissertation thus proposes a reinterpretation of endemicity as a mode of governance and experience, rather than merely a static epidemiological baseline. It proposes the concept of "viral atmosphere" as a theoretical framework elucidating the way in which contagion becomes perceivable through relational intensities generated by infrastructures, memories, and social interpretation (Böhme 1993; B. Anderson 2009). It develops "weight" as a term for the cumulative burden of those atmospheres as they persist over time, attach to people and places, and become unevenly distributed across social roles. By following the connections that join villages to hospital wards, surveillance

to treatment, and research programs to everyday life, the dissertation demonstrates that research, survival, and care are not separate domains but interlocking practices that coproduce what it means to "live in the Lassa belt."

One significant contribution of this dissertation is the expansion of the discourse surrounding disease spatiality and the politics of mapping in global health and medical geography. Scholarship has long demonstrated that spatial categories function as instruments of political influence by providing a framework for managing uncertainty, asserting authority, and operationalizing interventions within administrative contexts (Bowker and Star 1999; Leach, Scoones, and Stirling 2010). However, categories such as "hotspot" persist in being regarded as either a technical output of modeling or a rhetorical trope deployed by global health institutions. This dissertation offers an ethnographically grounded middle position, showing how a spatial category can become infrastructural and vernacular at the same time. It elucidates how this category is spoken, inhabited, and operationalized through everyday routines that appear mundane but are consequential. The "Lassa belt" emerges here as an instance of what the dissertation calls the "endemic place-making," defined as a process whereby recurrent encounters—including case admissions, blood draws, compensation practices, triage inquiries, and institutional storytelling—give rise to a commonsense geography of risk. The genealogy from other "belts" (such as the meningitis belt) is not employed as a simple analogy, but rather as a means to foreground the function of belts as regionalizing devices that link distant locations into a strip of shared risk, thereby converting ecological uncertainty into cartographic certainty and policy readiness. The dissertation contributes to this debate by focusing on how place-making also turns into burden-making: once "belt talk" becomes ordinary, it normalizes the idea that certain places should be repeatedly visited,

measured, and sampled, redistributing the work of knowledge production onto communities deemed accessible and epidemiologically significant. In this sense, the dissertation extends scholarship on classification by underscoring that categories do not only sort and standardize; they also generate atmospheric conditions that shape how individuals interpret care, research, and each other (Bowker and Star 1999; Ahmed 2013). The result is a conceptual bridge between disease mapping and lived experience: spatial categories are shown to be felt as social pressures, moral expectations, and reputational weights, rather than remaining external labels.

A second contribution pertains to the domain of anthropology and the broader discourse within STS on global health research as political economy, with a focus on extraction as a relational phenomenon rather than a mere scandal. The findings from clinical trials and global research have demonstrated how participation becomes a site of value production and how ethics travels through institutional scripts that rarely align with the lived constraints of participants (Petryna 2009; Cooper and Waldby 2014). Africanist scholarship has further shown how biomedical projects can function as "para-state" infrastructures, redistributing resources and authority while operating alongside national systems (Paul W Geissler 2015). This dissertation builds on those debates but shifts emphasis in two ways. First, it establishes a nexus between extraction and disease spatialization by demonstrating that extraction entails more than merely specimen removal; it is also a function of spatial legibility, where "belt" produces the moral and logistical plausibility of repeated sampling. Second, it theorizes exchange as a constitutive element in the stabilization of research at the local level, rather than perceiving it as a mere incentive appended to an otherwise neutral protocol. The "blood for cash" contract is examined as a vernacular form of accountability through which

participants translate an invasive procedure into a claim for immediate return, especially in contexts where routine care is unreliable and the promise of future benefit is uncertain. By foregrounding embarrassment, euphemism, rumor, and moral accusation, the dissertation contributes to ongoing debates on biovalue by asserting that value is inherently associated with social risk: money enables participation while simultaneously threatening respectability and provoking suspicion. Consequently, it reframes "rumor" not as misinformation but as critique—an evaluation of opacity and unequal circulation in which blood leaves communities and returns, if at all, only as delayed promises. In doing so, the dissertation makes a significant contribution to current debates on research fairness by demonstrating that reciprocity is demanded not only through formal benefit-sharing frameworks but also through everyday moral reasoning that interrogates the entities that benefit, the risks involved, and the entities capable of auditing the fate of bodily materials. It also complicates the discourse surrounding consent by identifying an "empty choice" dynamic in which participation may be formally voluntary but practically shaped by limited options, turning research into a pathway to care rather than a purely altruistic act (Kingori 2015).

A third contribution is to scholarship on epidemic affect, stigma, and the social afterlives of infection, particularly in settings where outbreaks are recurrent and endemicity is the dominant temporal condition. Anthropological research on epidemics has shown that fear, blame, and social fracture can spread in conjunction with pathogens, and that containment is contingent not only on clinical capacity but also on trust (Wald 2008; Richards et al. 2019). Studies on affect and atmosphere provide language for how collective intensities are generated through spaces, objects, and interactional cues, without reducing them to private psychology (Stewart 2007; Böhme

1993; B. Anderson 2009). The dissertation contributes to this body of literature by situating "viral atmosphere" not within the immediate context of an outbreak declaration but rather within the ordinary rhythms of an endemic zone: the corridor to the isolation unit, the gate checkpoint, the triage screen, the persistent signage from past crises, and the everyday talk that circulates between the medical wards and the villages. By examining survivorship across two affectively saturated spaces—the IU and the community—it argues that survival is not a clean endpoint but a second phase of atmospheric negotiation, where stigma and embodied aftereffects can keep the virus socially present even when infection has ended. This contributes to debates on survivorship that have often been dominated by Ebola as the paradigmatic case by showing how viral atmospheres are also produced in diseases that are less globally spectacular yet persistently consequential. The dissertation's emphasis on "weight" introduces an analytical dimension of duration and accumulation to atmosphere theory. Atmospheres become heavy when infections and deaths recur, when losses sediment into reputations, and when clinical uncertainty becomes social uncertainty, shaping future care-seeking behaviors. Rather than treating communities as irrationally fearful, the dissertation demonstrates that the "deathtrap" image of the IU emerges from a historically grounded interpretation, rooted in tangible experiences of loss and opacity. This approach is consistent with and builds upon the call to replace geographies of blame with geographies of compassion (Farmer 2006), while also specifying the institutional and relational mechanisms through which blame becomes spatialized onto "belts."

A fourth contribution is to hospital ethnography and the anthropology of care, especially debates about protocol, containment, and the moral economies of family labor in African hospitals. Ethnographic research has demonstrated that in settings with

limited resources, hospital care is predominantly characterized by improvisation and the contribution of patients' kin, predominantly women, who often perform tasks that would typically be considered nursing responsibilities in other contexts (Livingston 2012a). The dissertation extends this scholarship by bringing kinship care into a high-consequence infectious disease setting, where the presence of family caregivers is both clinically valuable and epidemiologically challenging. The account of maternal caretakers in the IU shows that containment is not simply implemented or resisted. Rather, it is continuously reconfigured by parental obligation, staff fatigue, and infrastructural constraints. This finding resonates with scholarship on "encampment" formations, in which the provision of care and control is achieved through perimeters, checkpoints, and regulated flows (Gomez-Temesio and Le Marcis 2017). By analyzing PPE practices as a form of experiential epidemiology—where staff infer risk from appearance, workload, and prior outcomes—the dissertation contributes to debates on how protocols drift and how "reasonable shortcuts" can be retrospectively reframed as dangerous lapses. Furthermore, it complicates standard Infection Prevention and Control (IPC) narratives by showing that uncertainty can be a productive catalyst as it can authorize maternal accompaniment, normalize the selective PPE use, and motivate calls for revised SOPs that recognize the roles of caregivers. Here, the dissertation's standpoint is not to romanticize kinship care, but to argue that any context-sensitive pathway must formalize and protect caregivers, rather than treating them as exceptions managed ad hoc. This adds to the growing body of literature that advocates for "care-centered" rather than purely "compliance-centered" approaches to infection control, where legitimacy is derived not through barriers alone but through transparency, relational trust, and visible care practices (Livingston 2012a; Mol 2008). It also repositions the IU as an institutional

archive in which past epidemics, current Lassa care, and global research infrastructures overlap, rendering containment a social and historical process rather than a purely technical arrangement.

Methodologically, the dissertation contributes to debates on how to study global health phenomena that are multi-scalar, temporally uneven, and institutionally distributed. Multi-sited ethnography has argued that contemporary objects of study—capital, science, disease, humanitarianism—cannot be apprehended within a single bounded site because they are constituted through connections, circulations, and partial infrastructures (Marcus 1995). The dissertation operationalizes this approach by tracing how a virus becomes socially and institutionally present across a network of village rumors and recruitment talk, hospital triage and ward routines, surveillance reports and laboratory results, and transnational research programs embedded in local infrastructures. Significantly, this thesis shows that "following the thing" can be constrained by the very politics under study. The inability to follow blood sampling teams was not merely a limitation but rather an insight into boundary work, ownership of data, and institutional anxieties concerning exposure and accountability. By treating refusal and restricted access as ethnographic material rather than as failure, the dissertation contributes to methodological discussions about how power structures fieldwork itself and how ethnographers must read gatekeeping as a practice of value protection within the political economy of research. The dissertation also makes a distinctive contribution through its focus on positionality. As a trained physician, my presence generated specific forms of interaction, including explanatory demands from residents who tested biomedical reasoning against local experience and who posed questions about uneven transmission and diagnostic uncertainty. Rather than regarding these inquiries as

misunderstandings, the dissertation conceptualizes them as situated epistemologies of risk, thereby demonstrating how communities undertake their own analytic endeavors in the face of uncertainty.

Substantively, the dissertation adds to current debates on "research capacity building" and "equitable partnerships" by demonstrating that these terms cannot be evaluated solely based on institutional outputs. In the Liberian case, the incorporation of Phebe Hospital into large research programs and diagnostic infrastructures—including CEPI-funded epidemiological studies implemented through an American university-associated operations—can be described as capacity building in a technical sense. Nevertheless, the dissertation demonstrates that the social dimension of this capacity is equally significant. While the diagnostic capability has the potential to reshape clinical suspicion, it also engenders community skepticism when results do not align with everyday expectations of what Lassa "should look like." Research presence can attract resources, but it can also deepen the sense that certain places exist to be repeatedly sampled, especially when benefits are episodic and future-oriented. By emphasizing the moral economy of participation, the dissertation proposes a more demanding standard for equity: reciprocity must be durable, explanations must travel back, and benefits must outlast project timelines. This reframing of debates about community engagement entails a shift in focus from communication strategies to structural conditions, including the reliability of routine care, the transparency of specimen circulation, and the institutional pathways through which communities can demand accountability. It also challenges a familiar policy tendency to perceive mistrust as a cultural impediment and rather depicts it as a historically rooted critique of unequal circulation, delayed benefits, and the discrepancy between extraction and return. In this sense, the dissertation

significantly contributes to scholarship that calls for political economy to be integrated into epidemic ethics, and for the ethics of research to be regarded as relational governance rather than as a narrow compliance regime (Petryna 2009; Cooper and Waldby 2014). It posits that endemic zones will remain "research-ready" landscapes unless reciprocal infrastructures are established that ensure the reliability of care and the tangible return of knowledge, rather than merely its promise.

The dissertation's conceptual innovations—"endemic place-making," "viral atmosphere," and "weight"—also speak to contemporary theoretical debates in anthropology about how to connect structure and experience without collapsing one into the other. "Endemic place-making" offers a theoretical framework for understanding how spatial categories, such as "Lassa belt," become lived infrastructures. It is neither a top-down imposition nor a pure vernacular invention, but a coproduction that occurs when institutional classifications are adopted into everyday speech and used to explain why outsiders keep arriving and why danger feels continuous. "Viral atmosphere" offers a way to conceptualize how risk is encountered as an environmental condition, produced through the interplay of material arrangements (gates, screens, corridors, PPE), social narratives (deathtrap, blame, stigma), and institutional routines (triage, surveillance, sampling). "Weight" adds a temporal ethics to these concepts by foregrounding accumulation, endurance, and distribution, directing attention to who carries the burdens of endemicity over time, among them survivors, mothers, clinicians, and communities marked as risky. Together, these concepts contribute to debates in affect theory by grounding atmosphere in institutional practices rather than in aesthetic description alone. Atmospheres are political in the sense that they shape action: when to seek care, whether to consent, how to interpret a diagnosis, and how to reintegrate

after survival (B. Anderson 2009; Ahmed 2013). Viral atmosphere and weight as concepts also contribute to debates in political ecology and global health by offering a vocabulary for understanding how ecological risks become socially complex through institutions and histories, without reverting to environmental determinism.

The dissertation's overarching implication is not that research should cease, nor that containment is merely oppressive, nor that spatial categories can be discarded. Instead, it is that endemic governance must be evaluated through its relational consequences and temporal commitments. The boom-and-bust cycles of research attention underscore a persistent dissonance between the crisis-oriented funding logics and the protracted reality of living with Lassa risk. The moral economy of "blood for cash" reveals that extraction can be considered socially viable only when immediate reciprocity is offered, but that such reciprocity is unstable when it is stigmatized, opaque, or disconnected from long-term improvement. The account of survivorship reveals that "outcome" encompasses not only survival but also reintegration, and that the social afterlives of infection can be as consequential as the clinical episode. The analysis of maternal caregiving in the IU reveals that protocols become legitimate only when they recognize and protect the actual infrastructures of care, including kinship labor that cannot simply be legislated away. Collectively, these findings indicate a transition from crisis-driven extraction to durable reciprocity. Reciprocity entails sustained clinical resources, survivor-sensitive reintegration pathways, transparent result-return, and institutionalized mechanisms for communities to influence research priorities and assess benefits. My findings also suggest that "capacity" should be assessed not solely through machines and training, but also by the extent to which communities perceive care as trustworthy and the extent to which the benefits of research are perceivable

beyond payment. Finally, the dissertation calls for a reimagining of endemic zones away from a geography of blame and perpetual availability for extraction, toward a geography of commitment, in which places like Bong County are recognized as sites of agency and entitlement rather than as laboratories of vulnerability. In that reimagining, the Lassa belt becomes not a destiny but a contested category that can be transformed through long-term investment in equitable knowledge production and robust care.

The dissertation closes, then, with a claim about what it means to "lighten" the weight of viral atmospheres. Weight cannot be eliminated with effective messaging alone because it is produced by histories of losses, recurrent extractions, and institutional improvisation under conditions of scarcity. However, it is possible to redistribute and reduce it through the implementation of durable practices of reciprocity and protection. These practices include the pairing of diagnostic certainty with explanation that travels back, the pairing of research value with local benefit that outlasts projects, the pairing of containment infrastructures with care infrastructures that make entry into the IU less like disappearance, and the pairing of survivorship with social support that makes "coming out" a recognized and protected transition rather than a lonely return. By showing how the belt is made, how exchange stabilizes research, how atmospheres shape illness experience, and how care is negotiated at the edge of contagion, the dissertation offers a set of analytic tools for scholars and practitioners working in other endemic zones where risk is persistently present but unevenly acknowledged. Its broader scholarly contribution is to demonstrate that the politics of epidemics does not begin at the time of outbreak declaration; rather, it begins in the gradual process of making places legible, bodies available, and care possible. In Bong County, that work has produced a world in which viruses are invisible but their infrastructures are tangible, and in which the heaviest

burdens are borne by those who reside in areas where global health most expects danger. The dissertation posits that these burdens are neither inherent nor unavoidable, and that the future of Lassa research and care hinges on the ability of global health to transition from episodic attention to sustained commitment, from extraction to reciprocity, and from risk mapping toward shared accountability.

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