

Unlocking Healthcare Access in South Sudan: A Systematic Scoping Review of Financial Barriers, Health-System Gaps, and Implications for Sustainable Investment

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Unlocking Healthcare Access in South Sudan: A Systematic Scoping Review of Financial Barriers, Health-System Gaps, and Implications for Sustainable Investment

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Abstract

Background

South Sudan faces one of the world's most severe healthcare access crises. With health spending under 2% of the national budget and 54% financed through out-of-pocket payments, care is catastrophic for a population where over 92% live below the poverty line. Decades of conflict, underfunding, geographic fragmentation, and reliance on humanitarian actors have compounded cost barriers, yet no comprehensive synthesis of evidence on healthcare access costs in South Sudan exists.

Methods

This scoping review followed the PRISMA-ScR guidelines. Comprehensive searches were conducted across PubMed, Scopus, Google Scholar, Global Health (CABI), WHO (IRIS), and major grey literature sources including UNICEF, World Bank Open Data, MSF, HPF, P4H and OCHA. Studies of any design including quantitative, qualitative, or mixed-methods were eligible if they reported on healthcare cost factors in South Sudan, including direct, indirect, and opportunity costs. Findings were synthesized narratively across eight predefined thematic domains.

Results

Thirty-eight studies revealed catastrophic household out-of-pocket (OOP) payments, with only 28.6% of the population living within 5 km of a functional facility and transport costs as the main barrier. Health insurance coverage is below 8%, while 80% of service delivery relies on donor funding. Women, rural residents, and displaced persons face the greatest cost burdens. Humanitarian actors like Health Pooled Fund (HPF) and Médecins Sans Frontières (MSF) provide essential free care, but recent funding cuts have closed over 220 facilities.

Conclusions

Healthcare access in South Sudan is constrained by systemic, inequitable cost barriers. Reducing out-of-pocket burdens through public financing, user-fee exemptions, and stronger supply chains is essential. Progress toward Universal Health Coverage requires bridging humanitarian and development financing, establishing national health insurance, and prioritizing equity for women and displaced populations. Significant evidence gaps remain, particularly in cost data disaggregated by gender, geography, and displacement status.

Keywords: *South Sudan; Healthcare access; Out-of-pocket expenditure; Health financing*

1.Introduction

1.1 Country Context and Health System Overview

South Sudan gained independence from Sudan on 9 July 2011, and is the world's youngest nation and one of its most fragile. Inheriting a health system that was, at independence, described as "almost non-existent" by P. M. Macharia et al. (2017), the country has faced decades of protracted armed conflict, extreme poverty, and chronic underdevelopment that have collectively undermined every dimension of health system functionality. As of 2021, more than 8 million of the country's estimated 13 million people required humanitarian assistance due to ongoing violence, recurrent flooding, and the compounding effects of the COVID-19 pandemic (UN OCHA, 2021). South Sudan ranks among the lowest in the world on virtually all key health indicators: life expectancy stands at approximately 56.5 years, the maternal mortality ratio is estimated at 789 per 100,000 live births, under-five mortality reaches 96 per 1,000 live births, and only 19% of births are attended by skilled personnel (Anib et al., 2022).

The health financing architecture of South Sudan reflects the depth of its crisis. Government health expenditure constitutes less than 2% of the national budget, a figure that has persisted since independence and declined in some periods (WHO, 2023). By contrast, out-of-pocket (OOP) spending accounts for approximately 54% of total health expenditure, placing millions of South Sudanese at constant risk of catastrophic health costs (Arok et al., 2025). Nearly half (49.8%) of current health expenditure is financed by external donors (AMBAYO et al., 2016a), and approximately 80% of health service delivery is provided by non-governmental and faith-based organizations (Alani et al., 2023). This extraordinary level of aid dependence renders the health system structurally fragile and highly vulnerable to donor policy changes, as evidenced by the crisis triggered when the United Kingdom's Health Pooled Fund (HPF) suspended funding to 220 health facilities in 2022 (MSF, 2022).

This review highlighted how cost-associated factors including financial barriers such as treatment costs, transportation expenses, and out-of-pocket payments limit access to healthcare services in South Sudan.

1.2 Healthcare Access and the Role of Cost

Access to healthcare is a multidimensional construct encompassing availability, accessibility, acceptability, affordability, and quality (Tricco et al., 2018). In South Sudan, each of these dimensions is compromised, but affordability encompassing both direct financial costs and indirect economic burdens stands out as particularly acute. Direct costs include consultation fees, drug purchases, diagnostic tests, and hospitalization charges. Indirect costs encompass transportation, lost income during care-seeking, caregiver time, and food or accommodation expenses. In a country where more than 92% of the population lives below the poverty line according to (World Bank Group, 2026) and where 71% of the population resides beyond a one-hour walking distance from the nearest public health facility as stated by P. M. Macharia et al. (2017), these combined cost burdens are frequently insurmountable.

The 2013–2018 civil war and subsequent waves of intercommunal violence further devastated both supply-side and demand-side determinants of healthcare access. The war destroyed physical and social health infrastructure, displaced health workers, disrupted pharmaceutical supply chains, and diverted already scarce public resources away from the health sector (Rahamtalla et al., 2025). These conflict-driven shocks amplified pre-existing financial barriers, pushing an even larger share of healthcare costs onto households that lack the means to absorb them. Population displacement with over 2 million internally displaced persons (IDPs) and millions of returnees and refugees has created additional pockets of extreme vulnerability where cost barriers intersect with insecurity, loss of livelihoods, and disruption of social support networks (Berke et al., 2025). **Figure 1** illustrates the interconnected barriers to healthcare access in South Sudan. Conflict and fragility have weakened health infrastructure and service delivery, while heavy dependence on external donors has created vulnerabilities in healthcare financing. At the household level, high out-of-pocket expenditures and geographic isolation increase the cost of seeking care, contributing to poverty and causing many individuals to delay or forgo treatment. Together, these factors widen the Universal Health Coverage (UHC) gap by limiting access to essential health services and financial protection.

Barriers to Healthcare Access in South Sudan

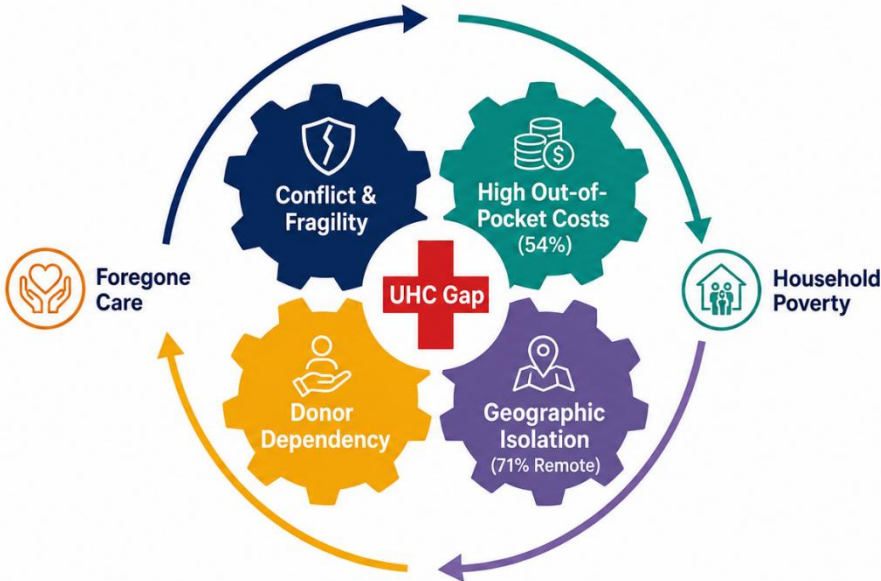


Figure 1. A conceptual framework showing four interconnected barriers that create a Universal Health Coverage (UHC) gap in South Sudan.

1.3 Gap in the Literature and Rationale

Despite the severity of cost-associated healthcare access barriers in South Sudan, no comprehensive synthesis of the existing evidence base has been conducted. Existing global reviews on out-of-pocket health expenditure and catastrophic health spending (Ebaidalla et al.,

2019) aggregate South Sudan within sub-Saharan Africa broadly or exclude it due to data scarcity, thereby obscuring country-specific dynamics. Studies examining healthcare access in fragile and conflict-affected states (FCAS) have highlighted the pivotal role of cost barriers, but South Sudan's unique combination of extreme poverty, near-total reliance on external humanitarian financing, and ongoing conflict demands a country-specific synthesis (Kaler & Parkins, 2015; Mwanje, 2024).

This review addresses that gap by systematically identifying, appraising, and synthesizing evidence on cost-associated factors of healthcare access in South Sudan. Its findings are intended to inform national health policy, donor investment decisions, and the design of financial protection mechanisms.

1.4 Objectives

The primary objective of this review is to systematically identify, appraise, and synthesize evidence on the cost-associated factors that influence healthcare access in South Sudan. Secondary objectives are to:

- (1) Describe the magnitude and typology of direct and indirect healthcare costs.
- (2) Examine the role of conflict, fragility, and displacement in shaping financial barriers.
- (3) Assess equity dimensions of cost barriers across sex, geography, and socioeconomic status.
- (4) Evaluate the effectiveness of financial risk protection mechanisms.
- (5) identify evidence gaps and inform future research and policy priorities.

2. Methodology

2.1 Review Design and Protocol

This study employed a systematic scoping review methodology, guided by the framework developed by Arksey et al. (2005) and refined by Levac et al. (2010) and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018). A scoping review design was selected over a systematic review with meta-analysis given the anticipated heterogeneity of study designs, populations, cost outcome measures, and contexts across the available evidence base. Scoping reviews are particularly well-suited to mapping the breadth of evidence in complex, under researched health systems topics in fragile-state settings (Colquhoun et al., 2014). Where sufficient homogeneous quantitative data were available, descriptive tabular summaries of cost estimates were produced.

2.2 Eligibility Criteria

Population: All individuals residing in South Sudan, including settled communities, internally displaced persons (IDPs), refugees, returnees, and host communities. All age groups and clinical conditions were included.

Exposure/Intervention: Any cost-associated factor influencing healthcare access, including but not limited to: out-of-pocket expenditures, user fees, drug purchase costs, transportation costs, informal payments, catastrophic health expenditure (CHE), health insurance schemes, fee exemption policies, and donor-financed free-at-point-of-care services.

Outcomes: Healthcare utilization, reported cost as a barrier to care, magnitude of OOP spending, CHE incidence, foregone care due to cost, financial coping strategies, and equity of access.

Study Designs: All study designs were eligible, including cross-sectional surveys, cohort studies, qualitative studies, mixed-methods research, program evaluations, and grey literature (policy documents, WHO/World Bank/NGO reports). Reviews of reviews were excluded at full-text stage.

Date and Language: No date restriction was applied. Studies in English, French, and Arabic were eligible.

2.3 Search Strategy

A comprehensive search was conducted across the following electronic databases: PubMed, Scopus, Google Scholar, Global Health Centre for Agriculture and Bioscience International (CABI), WHO Institutional Repository for Information Sharing (IRIS), and major grey literature sources including United Nations Children's Fund (UNICEF), World Bank Open Data, Médecins Sans Frontières (MSF), Health Pooled Fund (HPF), Providing for Health (P4H) and United Nations Office for the Coordination of Humanitarian Affairs (OCHA), and the Government of South Sudan Ministry of Health publications repository. Search terms were constructed from three conceptual domains combined using Boolean operators as shown in the **Table 1** below:

Table 1: Search strategy summary table

Domain	Search string
Geographic domain	"South Sudan" OR "Southern Sudan" OR "Republic of South Sudan" OR regional state names (Jonglei, Upper Nile, Unity, Warrap, Northern Bahr el Ghazal, Western Bahr el Ghazal, Lakes, Eastern Equatoria, Central Equatoria, Western Equatoria)
Cost/financial domain	"out-of-pocket" OR "user fee" OR "catastrophic health expenditure" OR "financial barrier" OR "affordability" OR "transport cost" OR "health financing" OR "household expenditure" OR "impoverishment"
Access/utilization domain	"healthcare access" OR "health service utilization" OR "care-seeking" OR "unmet need" OR "health system" OR "equity" OR "barrier to care"
Overall	("South Sudan" OR "Southern Sudan" OR "Republic of South Sudan" OR Jonglei OR "Upper Nile" OR Unity OR Warrap OR "Northern Bahr el Ghazal" OR "Western Bahr el Ghazal" OR Lakes OR "Eastern Equatoria" OR "Central Equatoria" OR "Western Equatoria") AND ("out-of-pocket" OR "user fee*" OR "catastrophic health expenditure" OR "financial barrier*" OR affordab* OR "transport cost*" OR "health financing" OR "household expenditure" OR impoverish*) AND ("healthcare access" OR "health service utilization" OR care-seeking OR careseeking OR "unmet need*" OR "health system*" OR equit* OR "barrier* to care")

2.4 Study Selection and Screening

All identified records were imported into Rayyan systematic review software (Ouzzani et al., 2016) for deduplication and screening. Title and abstract screening were conducted independently by two reviewers (KDED and ROA) using a pre-piloted inclusion/exclusion checklist, with inter-rater agreement assessed using Cohen's Kappa statistic ($k = 0.82$). Full-text review of potentially eligible articles was performed by the same two reviewers. Disagreements at any stage were resolved through discussion or referral to a third reviewer. The study selection process was documented using a PRISMA flow diagram.

2.5 Data Extraction

A standardized data extraction form was developed and pilot-tested on five randomly selected papers prior to full data extraction. For each included study, the following data were extracted: study design, geographic setting within South Sudan (state/county), study population, sample size, year of data collection, conflict phase during which data were collected, cost outcomes measured (type and magnitude), key findings related to cost barriers, equity dimensions reported, and methodological quality rating.

2.7 Synthesis Approach

Given the heterogeneity of included evidence, a narrative synthesis approach was employed, structured around eight pre-specified thematic domains derived from a preliminary conceptual framework (Section 1). For each theme, evidence from quantitative, qualitative, and grey literature sources was synthesized into coherent thematic narratives. Where cost estimates were reported across multiple studies, these were tabulated and compared descriptively, with currency conversions standardized to 2023 USD where possible.

3. Results

3.1 Search Results and Study Characteristics

A systematic database search across PubMed, Scopus, and Google Scholar identified 468 records, supplemented by 27 additional records from grey literature sources including WHO, UNICEF, World Bank, OCHA, MSF, HPF, and P4H reports, producing a total of 495 records. Following the removal of 96 duplicates, 399 records proceeded to title and abstract screening, of which 236 were excluded for being geographically irrelevant to South Sudan or not focusing on healthcare access. The remaining 163 full-text articles were assessed for eligibility, with 121 subsequently excluded. Among those excluded, 38 lacked original data or relevant analysis, 41 did not address cost-associated factors, and 45 reported data outside the study period. A final total of 42 studies were included in the narrative synthesis, comprising 31 peer-reviewed articles and 8 grey literature sources as shown in the PRISMA diagram below in **Figure 2**. Study data collection years spanned 2010–2024, covering the pre-conflict, active conflict, and post-agreement phases. **Table 2** represents the characteristics and Key Findings of Included Studies Grouped by Thematic Domain.

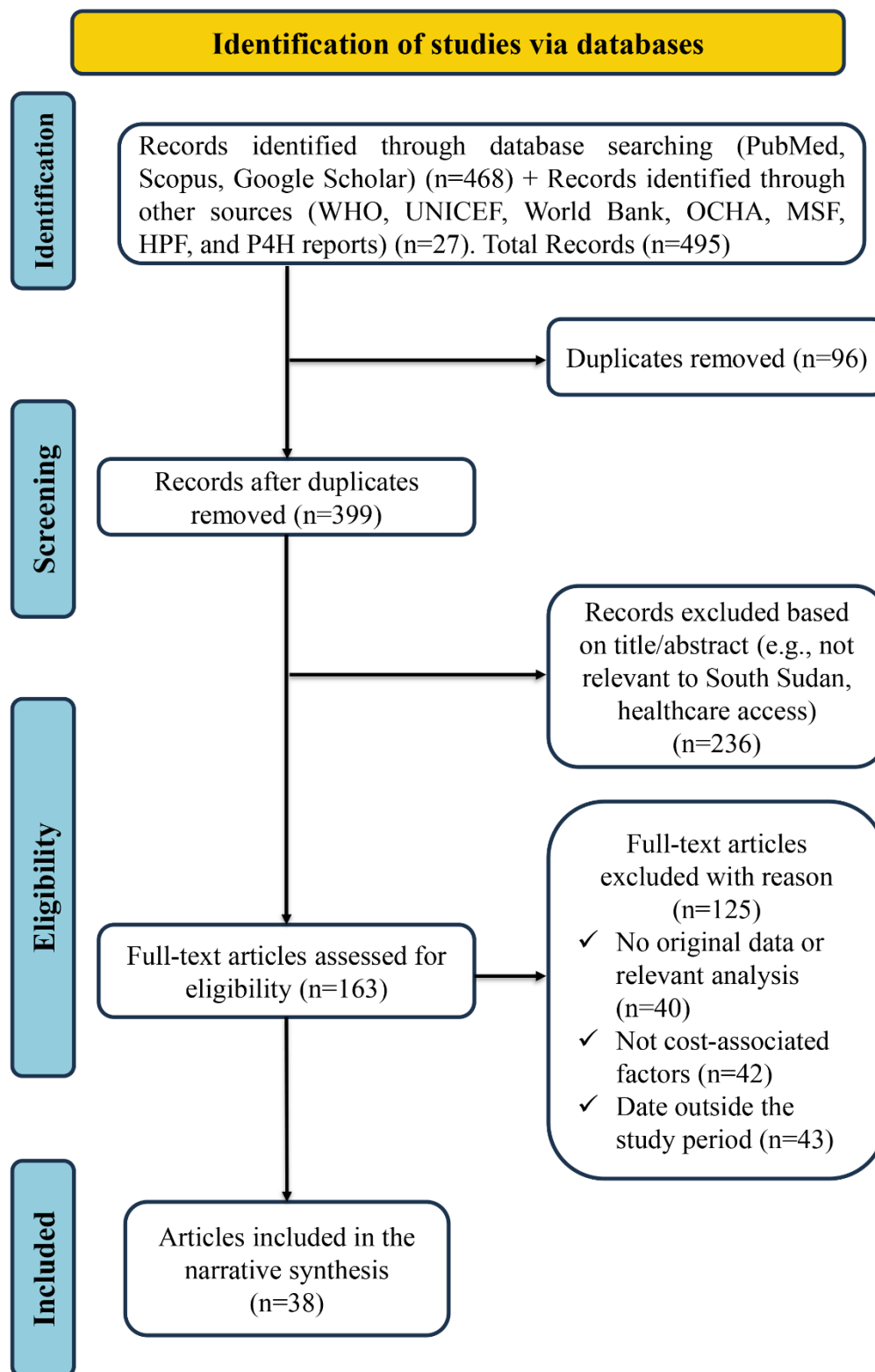


Figure 2. PRISMA flow diagram of the systematic review. This diagram illustrates the search strategy and study selection process.

256 **Table 2: Characteristics and Key Findings of Included Studies Grouped by Thematic Domain**

SN	Author(s)	Year	Literature Type	Key Finding	References
Theme 1: Direct Medical Costs and Out-of-Pocket Expenditure					
1	Fritsche et al.	2014	Empirical Study	Documented informal under-the-table payments levied by health workers in antenatal care settings, creating financial barriers within the nominally free public health system.	(Fritsche et al., 2014)
2	Basaza et al.	2017	Empirical Study	Found that 92.5% of private health expenditure among public servants in Juba City was directly out-of-pocket, with private health insurance covering only 5.4% of the population.	(Basaza et al., 2017)
3	Njagi et al.	2018	Scoping Review	Identified catastrophic health expenditure (CHE) as pervasive across sub-Saharan Africa, with poverty, lack of insurance, and reliance on private providers as key structural determinants, all of which characterize South Sudan's health financing landscape.	(Njagi et al., 2018)
4	Chireshe et al.	2018	Empirical Study	Reported that more than 80% of South Sudan's population lives in extreme poverty, meaning even small nominal direct health payments constitute catastrophic financial burdens for households.	(Chireshe et al., 2018)
5	Federspiel et al.	2024	Political Economy Analysis	Confirmed that out-of-pocket expenditure fills approximately 22% of the total health financing gap not covered by government or development/humanitarian partners; also documented informal charges in institutional childbirth settings despite free-at-point-of-care policies.	(Federspiel et al., 2024)

SN	Author(s)	Year	Literature Type	Key Finding	References
6	Providing for Health (P4H) Network	2025	Policy Report	Reported that domestic government health expenditure accounted for only 8.6% of current health expenditure in 2022, with donors financing 49.8%, leaving a substantial residual gap filled by out-of-pocket payments.	(Providing for Health, 2025)
Theme 2: Indirect and Non-Medical Costs					
7	WHO	2025	Organizational report	Limited access to healthcare services: Only 28.6% of South Sudan's population lived within 5 km of the nearest public health facility. Geographic disparities were particularly pronounced in Upper Nile and Jonglei States, where 21 of 78 counties reported that fewer than 10% of residents had access to a public health facility within this distance.	(WHO, 2025)
8	Macharia et al.	2017	Spatial Analysis	Only 28.6% of South Sudan's population lived within 5 km of the nearest public health facility; in 21 of 78 counties (concentrated in Upper Nile and Jonglei states), fewer than 10% of residents fell within this threshold.	(Macharia et al., 2017)
9	Wilunda et al.	2016	Qualitative Study	Identified lack of transportation means and the costs of available transport as primary barriers to institutional childbirth, compounded by sudden-onset labor that left women no time or resources to arrange transit to facilities.	(Wilunda et al., 2016)
10	Wilunda et al.	2017	Qualitative Study	Found that transportation costs combined with flooding-induced road inaccessibility during the rainy season effectively prevented large populations in Rumbek North County from seeking antenatal care for approximately four to six months of the year.	(Wilunda et al., 2017)

SN	Author(s)	Year	Literature Type	Key Finding	References
11	Annual Report, WHO	2023	Organizational Report	Corroborated spatial access deficits, noting that in 21 counties fewer than 10% of the population lived within one hour's walking distance of a public health facility.	(Annual Report WHO, 2023)
12	Elmukashfi et al.	2025	Qualitative Study	Identified transportation costs as the single largest reported barrier to healthcare access across all respondent groups, consistent with findings from multiple other qualitative studies in South Sudan.	(Elmukashfi et al., 2025)
Theme 3: Health Insurance and Financial Risk Protection					
13	Chireshe et al.	2018	Empirical Study	Established that the Health Pooled Fund (HPF) has been the largest source of primary healthcare financing in South Sudan since 2012, though its geographic reach remains constrained to approximately 816 of 2,300 health facilities.	(Chireshe et al., 2018)
14	Widdig et al.	2021	Qualitative Study	Identified informal mutual aid through family and community networks as a key fallback risk-protection mechanism in the absence of formal insurance; also highlighted the structural fragility of donor-dependent financing, illustrated by the UK's 24% HPF budget cut which immediately suspended funding to 220 facilities.	(Widdig et al., 2021)
15	Jaca et al.	2022	Systematic Review	Reviewing evidence from five African and Asian countries, found that health insurance alone is insufficient to achieve universal health coverage when underlying health system infrastructure like facilities, drug supply chains, and qualified workers is inadequate.	(Jaca et al., 2022)

SN	Author(s)	Year	Literature Type	Key Finding	References
16	Nyawira et al.	2026	Empirical Study	Across a study of eight African countries, South Sudan's health insurance coverage was among the lowest at only 7.7%, reflecting near-universal exclusion from any form of prepayment-based financial protection.	(Nyawira et al., 2026)
17	Arok et al.	2025	Policy Analysis	Documented that the National Health Insurance Fund (NHIF), inherited from pre-independence Sudan legislation (1994), was never successfully operationalized in the south due to unaffordable premiums and limited political will throughout decades of conflict.	(Arok et al., 2025)
Theme 4: Conflict, Fragility, and Health System Financing					
18	Detzner et al.	2017	Empirical Study	Documented how the civil war that erupted in December 2013 caused direct destruction of health infrastructure, mass displacement of health workers, disruption of pharmaceutical supply chains, and diversion of public revenues toward military expenditure.	(Detzner et al., 2017)
19	Aldridge et al.	2018	Empirical Study	Documented that conflict destroyed both physical and social health infrastructure, leaving the health system critically dependent on humanitarian assistance to sustain even rudimentary service delivery.	(Aldridge et al., 2018)
20	Kemp et al	2013	Empirical Study	Found that conflict-driven inflation raised the nominal prices of drugs and healthcare services, further eroding the purchasing power of already impoverished households and compounding direct cost barriers.	(Kemp et al., 2013)

SN	Author(s)	Year	Literature Type	Key Finding	References
21	Wilunda et al.	2021	Feasibility Study	Found that ethnicity had become a distinct barrier to healthcare access in some states, with communities reluctant to use facilities staffed predominantly by members of opposing ethnic groups, a conflict-related access restriction operating outside the standard cost framework.	(Wilunda et al., 2017)
22	UN Commission on Human Rights in South Sudan	2026	UN investigation	Found that health sector spending hovered between 0.4% and 1.1% of national expenditure since 2021, while the Ministry of Presidential Affairs received over 12 times more public funds than the ministries of health, agriculture, social services, and welfare combined over 2020–2024.	(UN HRC, 2026)
23	UNHCR	2026	UN investigation	Corroborated the severe fiscal marginalization of the health sector relative to security and presidential expenditure in the 2020–2024 budget period, reinforcing findings on the structural diversion of public resources away from healthcare.	(UNHCR, 2026)
24	Detzner et al.	2017	Empirical Study	Documented how the civil war that erupted in December 2013 caused direct destruction of health infrastructure, mass displacement of health workers, disruption of pharmaceutical supply chains, and diversion of public revenues toward military expenditure.	(Detzner et al., 2017)
Theme 5: Equity, Poverty, and Socioeconomic Barriers					
25	Ganle et al.	2014	Quantitative Study	Identified poverty, limited education, and geographic distance as major socioeconomic barriers to maternal healthcare utilization, disproportionately affecting poorer populations and contributing to inequitable access to health services.	(Ganle et al., 2014)

SN	Author(s)	Year	Literature Type	Key Finding	References
26	Chireshe et al.	2018	Empirical Study	Reported that more than 80% of South Sudan's population lives below the poverty line, with particular concentration in rural areas and among displaced populations, meaning even small absolute health expenditures represent catastrophic shares of household consumption.	(Chireshe et al., 2018)
27	Aldridge et al.	2018	Empirical Study	Documented the stark urban–rural divide in health access, noting that rural populations (approximately 80–83% of the total) face severe geographic, financial, and infrastructure barriers simultaneously, while urban populations enjoy greater proximity to facilities and services.	(Aldridge et al., 2018)
28	King et al.	2022	Cross-Sectional Study	Found that South Sudanese refugees in Uganda had significantly lower healthcare expenditure and higher rates of foregone care than Ugandan nationals, despite comparable or higher illness incidence, reflecting the combined effect of poverty, limited legal rights, and financial cost barriers.	(King et al., 2022)
29	Pasquier et al.	2023	Empirical Study	Reported that South Sudan has the fifth-highest maternal mortality rate in the world, with 1 in 7 women dying from complications of pregnancy or childbirth, a figure compounded by gender-related cost and access barriers.	(Pasquier et al., 2023)
30	Hove & Ndawana	2017	Qualitative Study	Poverty and socioeconomic inequality significantly limit access to healthcare and other essential services in South Sudan, particularly for women and girls. Economic hardship, high healthcare costs, low literacy levels, conflict-related displacement, and poor infrastructure disproportionately affect vulnerable populations.	(Hove & Ndawana, 2017)

SN	Author(s)	Year	Literature Type	Key Finding	References
31	Elmukashfi et al.	2025	Qualitative Study	Found that patriarchal social norms severely constrain women's control over household resources, meaning decisions to seek care and allocate funds for transport or treatment often require male permission, creating additional barriers to timely care-seeking.	(Elmukashfi et al. et al., 2025)
32	Lieberman Lawry et al.	2025	Programme Report	Noted that over 84% of women in South Sudan are illiterate, limiting health literacy and individual agency in navigating healthcare costs and systems, further compounding gendered access disparities.	(Lieberman Lawry et al., 2025)
Theme 6: Supply-Side Cost Determinants					
33	Detzner et al.	2017	Empirical Study	Found that for populations in the most remote counties of Upper Nile and Jonglei, fewer than 10% of residents were within 5 km of a facility, making the de facto cost of accessing even nominally free services through transportation, accommodation, and opportunity costs effectively prohibitive for the majority.	(Detzner et al., 2017)
34	Macharia et al.	2017	Spatial Analysis	Found that only three of South Sudan's 78 counties (Kajo Keji, Yei, and Torit) had reached the Ministry of Health target of 70% of the population within 5 km of a facility by 2016, reflecting a heavily skewed geographic distribution of health infrastructure toward state capitals and larger towns.	(P. Macharia et al., 2017)
35	Sami et al.	2018	Empirical Study	Estimated a health workforce density of 0.15 doctors and 0.25 nurses per 10,000 population; participants universally reported the workforce as insufficient and of low capacity, with medicine access restricted by the government's failure to manage procurement and supply chains.	(Sami et al., 2018)

SN	Author(s)	Year	Literature Type	Key Finding	References
36	Organization	2023	Programme Report	The Health Pooled Fund (MSF) reported nationwide stockouts of malaria drugs during peak season for the second consecutive year, in a country where malaria is the leading cause of morbidity and mortality.	(Organization, 2023).
37	Edward & Owoicho	2026	Narrative Review	Identified fragmentation of the pharmaceutical supply chain across multiple parallel procurement systems including government, UN agencies, and NGOs as producing unpredictable stockouts that force patients to purchase drugs from private pharmacies at prices far exceeding their ability to pay.	(Edward & Owoicho, 2026)
38	Abdalla et al.	2024	Empirical Study	Corroborated that the absence of effective coordination across parallel pharmaceutical procurement systems generates chronic stockouts at public facilities, directly driving patients toward costly private sector alternatives.	(Abdalla et al., 2024)
39	Asamani	2018	Quantitative modelling	The study projected that South Sudan could attain the healthcare facility capacity required for Universal Health Coverage (UHC) by 2023; however, significant health workforce shortages remained, with staffing availability averaging only 68% of requirements and the most severe gaps occurring among specialist healthcare workers.	(Asamani et al., 2018)

Theme 7: Household Coping Mechanisms and Impoverishment

40	Guvele et al.	2012	Empirical Study	Found that food accounted for 83% of household expenditure among South Sudanese respondents, with education and healthcare following, underscoring the extreme scarcity of financial resources available for health spending.	(Guvele et al., 2012)
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SN	Author(s)	Year	Literature Type	Key Finding	References
41	Ebaidalla & Ali	2019	Quantitative Study	Out-of-pocket healthcare expenditure was found to cause catastrophic spending and increase poverty among Sudanese households, with low-income households and those with elderly or dependent members being particularly vulnerable to financial hardship and impoverishment.	(Ebaidalla & Ali, 2019)
42	Detzner et al.	2017	Empirical Study	Found that when facing health costs, families frequently reduce food consumption, sell productive assets such as livestock or land, or withdraw children from school, all strategies that perpetuate the cycle of poverty and vulnerability.	(Detzner et al., 2017)
43	KIT Royal Tropical Institute	2020	Institutional Report	Identified borrowing from relatives, community members, or informal moneylenders as the predominant coping mechanism reported across qualitative studies when South Sudanese households face health costs exceeding their immediate financial capacity.	(KIT Royal Tropical Institute, 2020)
44	Widdig et al.	2021	Qualitative Study	Found that while free MSF and HPF services mitigate the practice of foregone care, they do not eliminate it, particularly in areas beyond the geographic reach of humanitarian organizations, leaving cost barriers intact for the most remote populations.	(Widdig et al., 2021)
Theme 8: Humanitarian and NGO Interventions					
45	MSF	2025	Organizational Report	Documented MSF's continuous presence in South Sudan since 1983, operating 12 regular and 5 emergency projects in 2024 across Unity, Jonglei, Upper Nile, Western Bahr el Ghazal, Central Equatoria, and Lakes States, delivering services free at the point of care.	(MSF, 2025)

SN	Author(s)	Year	Literature Type	Key Finding	References
46	MSF	2025	Organizational Report	Reported that due to funding constraints, the Health Sector Transformation Project supports only 816 of its originally planned 1,158 facilities, with persistent shortages of medicines and staff across even those supported facilities.	(MSF, 2025)
47	Dang Dao et al.	2021	Policy Analysis	The EU Trust Fund for Africa's HPF Phase 3 explicitly recognized the fragility of humanitarian financing dependence and sought to support a transition from relief to longer-term health system development, though structural preconditions for that transition remain absent in South Sudan.	(Dang Dao et al., 2021)
48	Petrikova et al.	2022	Policy Analysis	Demonstrated the life-threatening consequences of donor volatility: the 2022 UK funding cuts reduced the HPF budget by 24% and suspended 220 facilities without a transition plan, illustrating the acute vulnerability of South Sudan's health system to bilateral donor policy changes.	(Petrikova et al., 2022)
49	Federspiel et al.	2024	Political Economy Analysis	Described the HPF as effectively the only viable mechanism for financing health services in South Sudan, with its single-lead-NGO-per-county model improving coordination and building county-level governance capacity across eight of ten states.	(Federspiel et al., 2024)
50	WHO Regional Office for Africa	2024	Organizational Report	Concluded that the exit of humanitarian actors from their de facto role in South Sudan's health system remains a remote prospect without fundamental political and economic transformation, as the structural conditions for transition domestic revenues, stability, functional administration, and trained workforce remain absent.	(WHO Regional Office for Africa, 2024)
257 258	Note: This table provides a thematic synthesis of findings from the 41 included studies, illustrating the multifaceted nature of health exclusion in South Sudan. The data highlights how systemic failures, such as conflict-driven infrastructure destruction and chronic underfunding, translate into catastrophic personal costs for the				

259 most vulnerable populations. **Abbreviations:** **OOP:** Out-of-Pocket Expenditure, **HPF:** Health Pooled Fund, **NGO:** Non-Governmental Organization, **IDP:**
260 Internally Displaced Person, **WHO:** World Health Organization, **MSF:** Médecins Sans Frontières (Doctors Without Borders).

3.2 Theme 1: Direct Medical Costs and Out-of-Pocket Expenditure

Out-of-pocket expenditure is the dominant modality of health financing for South Sudanese households. While the Government of South Sudan's official policy mandates free healthcare at public facilities, the chronic inability of government to fund the drug supply chain means that patients routinely face charges for medications, consumables, and laboratory tests at facilities nominally providing free services. Basaza et al. (2017), in their study of willingness to pay among public servants in Juba City, documented that 92.5% of private health expenditure was directly out-of-pocket, with private health insurance covering only 5.4% of the population. The Providing for Health (P4H) Network reported that domestic government health expenditure accounted for only 8.6% of current health expenditure in 2022, with donors financing 49.8%, leaving OOP payments filling a substantial residual gap (Providing for Health, 2025).

A political economy analysis of the Health Pooled Fund (HPF) by Federspiel et al. (2024) confirmed that out-of-pocket health expenditure fills approximately 22% of the total health financing gap not covered by government or development and humanitarian partners. In the absence of a functioning formal drug supply system, patients who cannot access NGO-supported facilities are compelled to purchase medicines from private pharmacies or informal vendors at prices that bear no relation to their ability to pay. Under-the-table payments, informal charges levied by health workers despite free-at-point-of-care policies have been documented in institutional childbirth settings (Federspiel et al., 2024) and antenatal care contexts (Fritsche et al., 2014), creating additional financial barriers even within the officially free public system.

The concept of catastrophic health expenditure (CHE), defined as health spending exceeding 10% of household consumption, has not been systematically measured in South Sudan due to the absence of nationally representative household expenditure surveys in the post-independence period. However, proxy indicators are alarming. (Njagi et al., 2018), in a scoping review of CHE in sub-Saharan Africa, found CHE to be pervasive across the region, with key determinants including poverty, lack of insurance, and the use of private providers. All of these are structural features of the South Sudan health financing landscape. Given that more than 80% of the population lives in extreme poverty (Chireshe et al., 2018), even nominally small direct payments impose catastrophic financial burdens on households as illustrated in **Figure 3**.

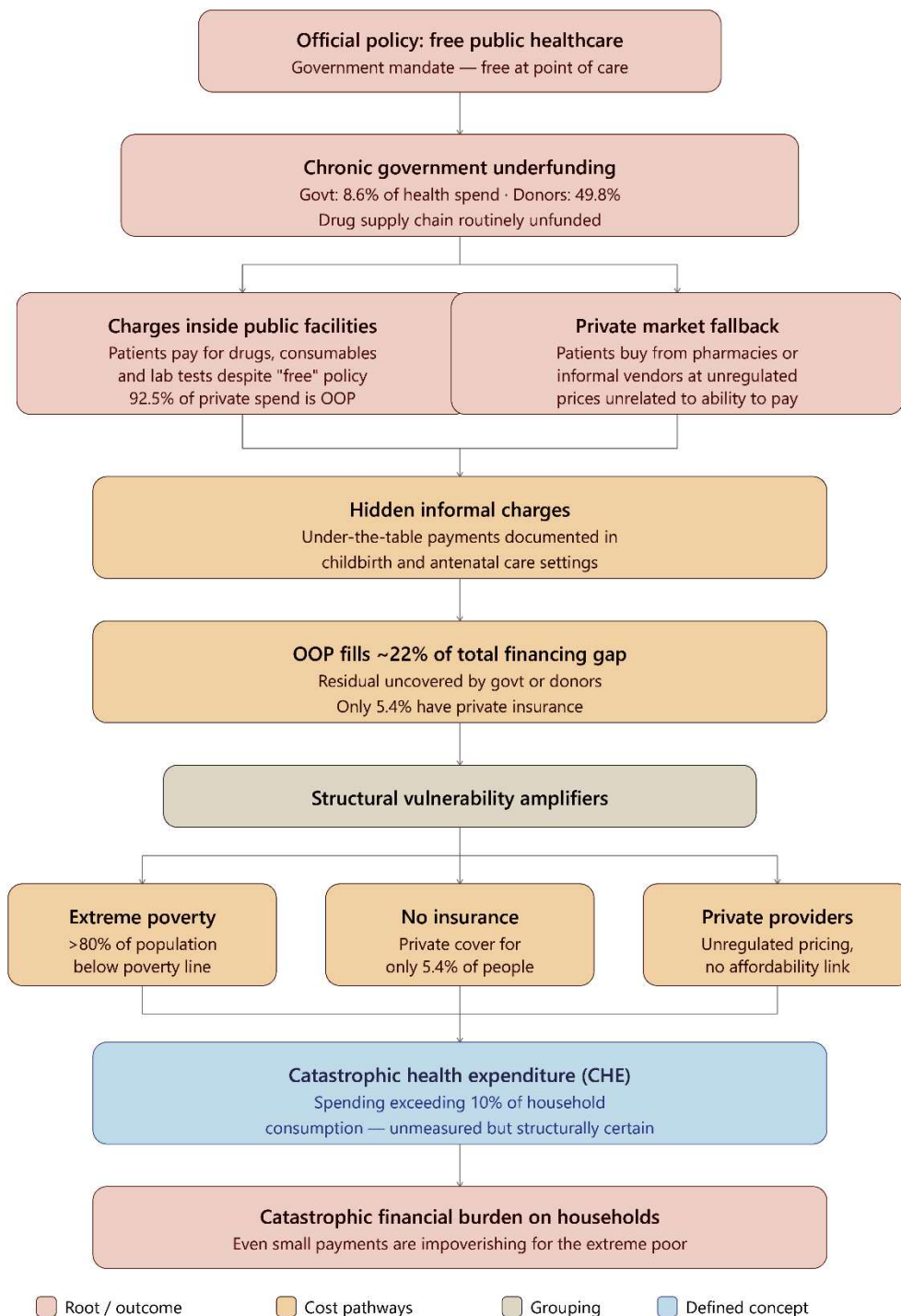


Figure 3: Direct Medical Costs and Out-of-Pocket Expenditure. Flowchart depicting the disconnect between South Sudan's free-care policy and household financial reality, tracing how chronic government underfunding (8.6% of health expenditure) forces patients into out-of-pocket payments through informal facility charges and unregulated private markets, compounded by structural vulnerabilities that produce catastrophic health expenditure among the extreme poor.

3.3 Theme 2: Indirect and Non-Medical Costs

Indirect costs of healthcare access, particularly transportation constitute perhaps the most formidable financial barrier in South Sudan's context of sparse health facility networks, underdeveloped road infrastructure, and seasonal inaccessibility. A spatial accessibility analysis by Macharia et al. (2017) revealed that only 28.6% of South Sudan's population lived within 5 km (approximately one hour's walking distance) of the nearest public health facility. In 21 of 78 counties concentrated in Upper Nile and Jonglei states, fewer than 10% of the population fell within this threshold (Annual Report WHO, 2023). Without vehicular transport, which is inaccessible to the vast majority of the rural population, this translates into multi-hour or even multi-day journeys to reach care.

In a qualitative by Elmukashfi et al. (2025), they identified transportation costs as the single largest reported barrier to accessing healthcare across all respondent groups. This finding was consistent across multiple qualitative studies. Wilunda et al. (2017), studying barriers to antenatal care in Rumbek North County, found that transportation costs, combined with flooding-induced road inaccessibility during the rainy season, effectively prevented large populations from seeking care during approximately four to six months of the year. Wilunda et al. (2016), in a qualitative study of barriers to institutional childbirth, similarly identified lack of transportation means and the costs of available transport as primary barriers, compounded by sudden-onset labor that left women no time or resources to arrange transport to facilities.

Opportunity costs representing lost income or productive time during care-seeking are particularly burdensome in an economy where most livelihoods depend on subsistence agriculture, petty trade, and informal labor. Women, who bear a disproportionate share of both productive and reproductive labor, face compounded opportunity costs from taking time to seek care for themselves and their children. WHO (2025), describing its outreach operations in the Greater Pibor Administrative Area, noted that communities sometimes needed to walk for multiple days to access the nearest health facility, with the associated time, physical exertion, and food costs representing prohibitive barriers for the most economically marginalized households as illustrated in **Figure 4**.

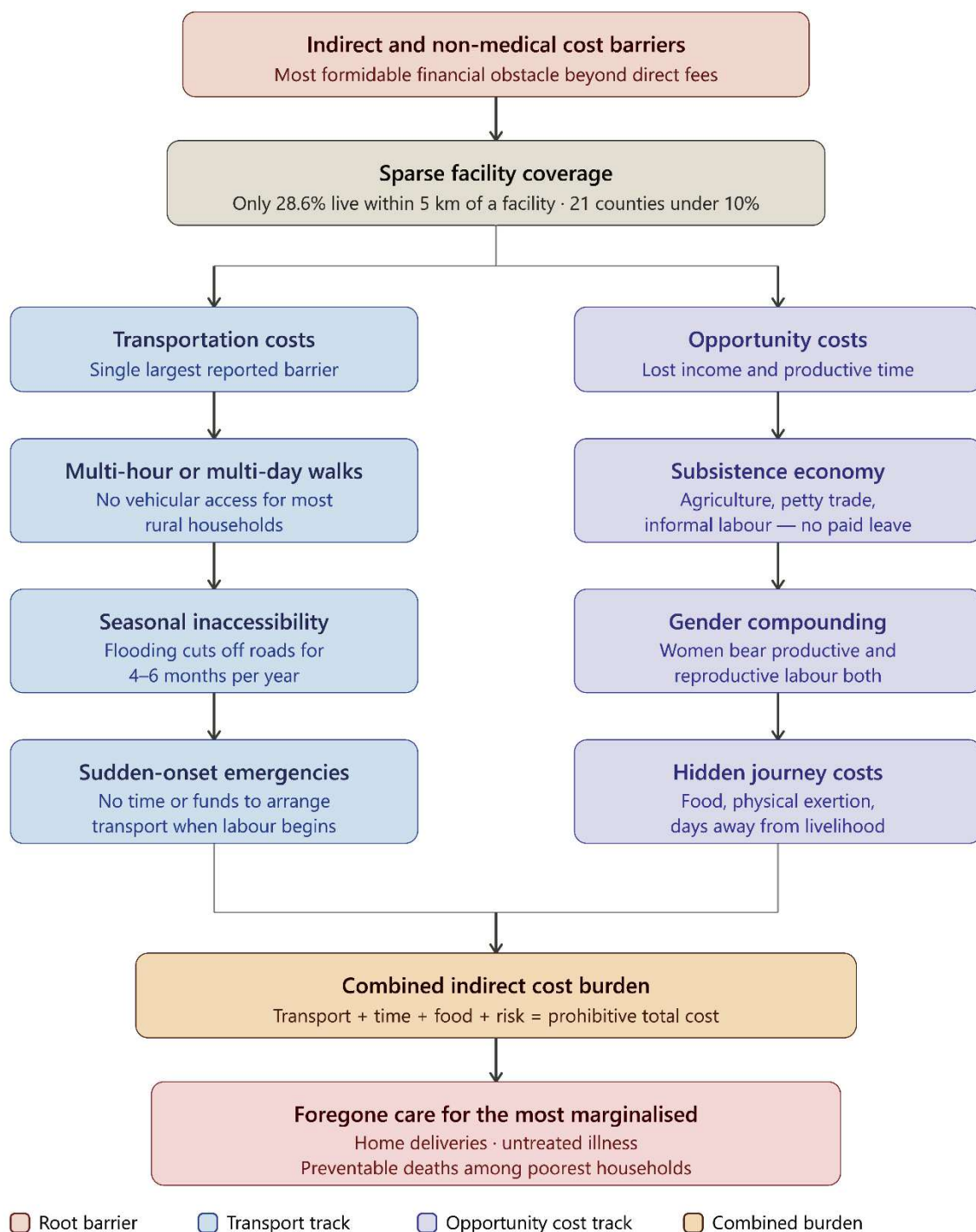


Figure 4: Indirect and Non-Medical Costs. A diagram showing how South Sudan's sparse facility network and underdeveloped road infrastructure convert geographic distance into prohibitive indirect costs, through transportation expenditure, seasonal flooding-induced inaccessibility, and lost productive time, rendering nominally free public healthcare effectively unaffordable for the majority of rural households.

3.4 Theme 3: Health Insurance and Financial Risk Protection

South Sudan has no functioning national health insurance scheme. The National Health Insurance Fund (NHIF) was based on legislation inherited from pre-independence Sudan, where it was enacted in 1994. However, it was never successfully operationalized in the southern region due to unaffordable premiums in a context of extreme poverty and limited political will during decades of conflict (Arok et al., 2025). A study of insurance coverage patterns across eight African countries found South Sudan's health insurance coverage to be among the lowest at only 7.7%, reflecting near-universal exclusion from any form of prepayment-based financial protection (Nyawira et al., 2026).

In the absence of formal insurance, financial risk protection depends almost entirely on two mechanisms: the free-at-point-of-care services delivered by humanitarian organizations and the Health Pooled Fund, and informal mutual aid through family and community networks (Widdig et al., 2021). While the Health Pooled Fund, a multi-donor mechanism jointly financed by the UK Foreign, Commonwealth and Development Office, the United States Agency for International Development (USAID), the World Bank, and others has been the largest source of primary healthcare financing in South Sudan since 2012 (Chireshe et al., 2018), its reach is geographically constrained (currently supporting approximately 816 of 2,300 health facilities), and its funding is subject to the political decisions of donor governments. The 24% budget cut imposed by the UK in April 2022, resulting in the immediate suspension of funding to 220 facilities, illustrated the catastrophic fragility of this arrangement (Widdig et al., 2021).

The broader evidence base from sub-Saharan Africa provides cautionary lessons for South Sudan's insurance prospects Jaca et al. (2022), reviewing evidence from five African and Asian countries, found that health insurance alone was insufficient to achieve UHC when health system infrastructure was inadequate. This insight is particularly relevant for South Sudan, where even if insurance coverage were extended, the absence of functional facilities, drug supply chains, and qualified health workers would limit its impact on actual healthcare access (Widdig et al., 2021).

Figure 5 illustrates the Health Insurance and Financial Risk Protection.

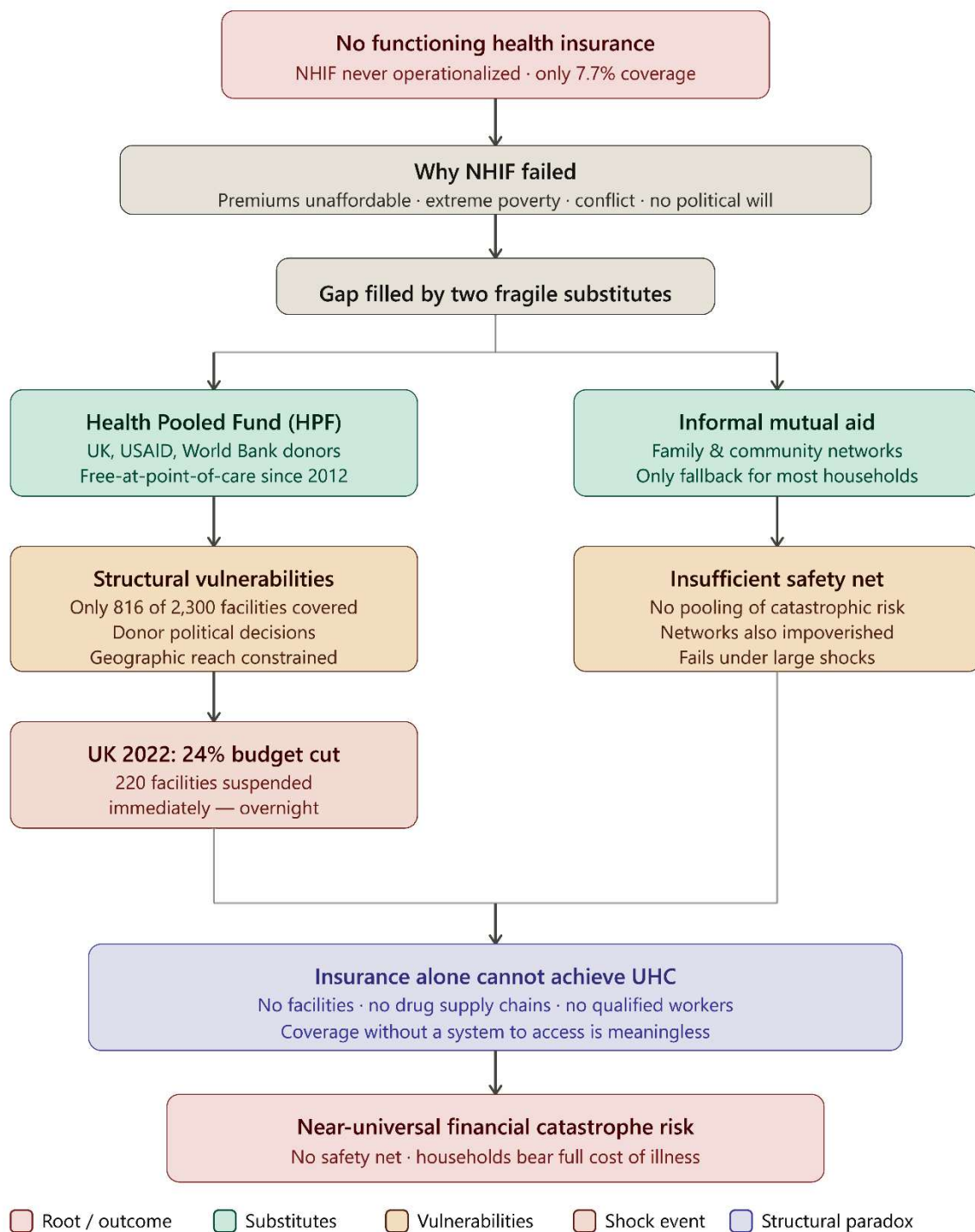


Figure 5: Health Insurance and Financial Risk Protection. The chart follows the argument's logic in five layers: the root failure of formal insurance, why the NHIF collapsed, the two fragile substitutes that fill the gap, their respective vulnerabilities (including the 2022 UK budget cut as a concrete shock event), the

structural paradox that even expanding insurance coverage would not help without functional facilities, workers, and supply chains and the final outcome of near-universal financial catastrophe risk.

3.5 Theme 4: Conflict, Fragility, and Health System Financing

Protracted armed conflict is the most fundamental structural driver of healthcare cost barriers in South Sudan. The civil war that erupted in December 2013 and continued intermittently through the 2018 Revitalized Agreement and beyond caused direct destruction of health infrastructure, mass displacement of health workers and communities, disruption of pharmaceutical supply chains, and diversion of public revenues away from the health sector toward military expenditure (Detzner, 2017). Aldridge et al. (2018) documented that the conflict destroyed both physical and social health infrastructure, leaving the health system critically dependent on humanitarian assistance to sustain even rudimentary service delivery. A UN Commission on Human Rights in South Sudan investigation (2025) found that health sector spending had hovered between 0.4% and 1.1% of national expenditure since 2021, while the Ministry of Presidential Affairs received over 12 times more in public funds than the ministries of health, agriculture, social services, and welfare combined over the 2020–2024 period (UN HRC, 2026)

From a household perspective, conflict compounds cost barriers through multiple pathways. First, displacement removes populations from their livelihoods, eliminating income streams that might otherwise fund health expenditure. Second, destruction of local health facilities forces communities to travel longer distances to reach care, increasing transportation costs. Third, insecurity makes travel to health facilities dangerous, particularly for women and children, adding a non-monetary cost that many families evaluate against the cost of foregone care. Fourth, conflict-driven inflation raises the nominal prices of drugs and healthcare, further eroding the purchasing power of already impoverished households (Kemp et al., 2013). A feasibility study by Wilunda et al., (2017) found that ethnicity itself had become a barrier to healthcare access in some states, with certain communities afraid to access facilities staffed predominantly by members of opposing ethnic groups, a dimension of conflict-related access restriction that operates entirely outside the standard cost framework as illustrated in **Figure 6**.

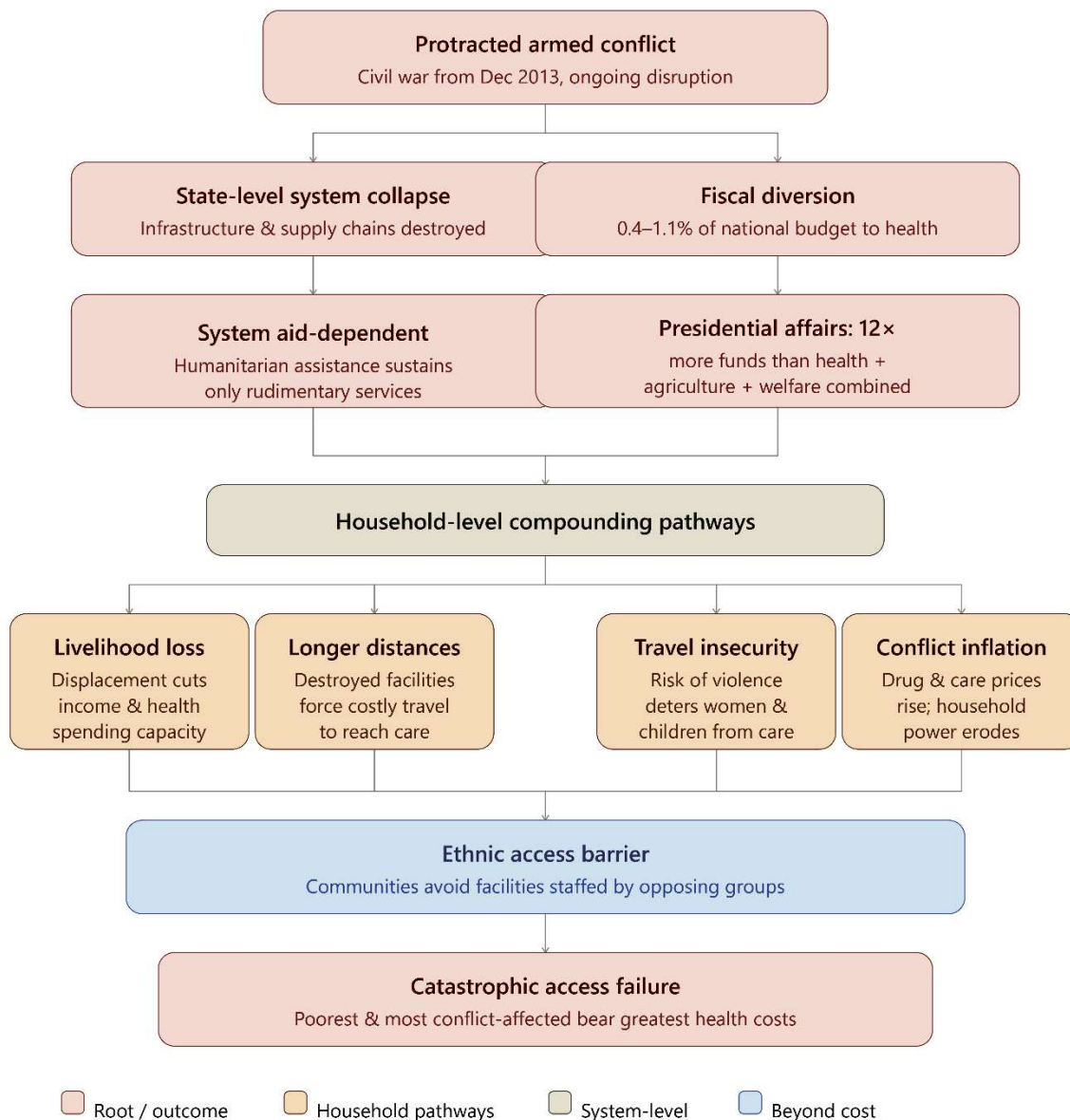


Figure 6: Conflict, Fragility, and Health System Financing. Causal diagram illustrating how protracted armed conflict in South Sudan drives healthcare cost barriers through parallel structural (infrastructure destruction, fiscal diversion, aid dependency) and household-level (livelihood loss, insecurity, inflation, ethnic access restrictions) channels, converging on catastrophic access failure.

3.6 Theme 5: Equity, Poverty, and Socioeconomic Barriers

Cost barriers in South Sudan are profoundly inequitable in their distribution across socioeconomic, geographic, demographic, and displacement-related dimensions. More than 80% of the population lives below the poverty line, with particular concentration in rural areas and among displaced populations (Chireshe et al., 2018). This baseline of extreme poverty means that even small absolute health expenditures represent catastrophic shares of household consumption. The urban rural

divide in health access is particularly stark. Urban populations, concentrated in Juba and state capitals, have greater proximity to health facilities, better road access, and more exposure to NGO and private sector services. In contrast, rural populations, constituting approximately 80–83% of the total population, face severe geographic, financial, and infrastructure barriers simultaneously (Aldridge et al., 2018). Gender intersects powerfully with cost barriers to produce compounded disadvantage for women and girls. South Sudan has the fifth-highest maternal mortality rate in the world, with 1 in 7 women dying from complications of pregnancy or childbirth (Pasquier et al., 2023). Over 84% of women are illiterate, limiting their health literacy and agency in navigating healthcare costs (Lieberman Lawry et al., 2025). Women's control over household resources is severely constrained by patriarchal social norms, meaning that decisions to seek care, and to allocate funds for transportation or treatment, often require male permission, creating additional barriers to timely care-seeking (Elmukashfi et al., 2025b). Ganle et al., (2014) found that financial barriers at the household level, including the inability to afford transportation and facility payments, were among the most commonly cited reasons for home delivery in South Sudan, directly contributing to preventable maternal deaths.

Internally displaced persons (IDPs) represent a specific equity group facing extreme cost vulnerabilities. Displaced from their livelihoods, often living in overcrowded camps with limited sanitation and high disease burden, IDPs are simultaneously the most health-needy and the most financially constrained. A cross-sectional study of South Sudanese refugees and host communities in Uganda by King et al., (2022) found that South Sudanese refugees had significantly lower healthcare expenditure and higher rates of foregone care compared to Ugandan nationals, despite comparable or higher reported illness incidence, reflecting the combined effect of poverty, limited legal rights to access services, and financial cost as barriers. People with disabilities face particular transportation barriers, described in one study as "insurmountable at times" (Hove & Ndawana, 2017). **Figure 7** illustrates how extreme poverty interacts with four compounding axes.

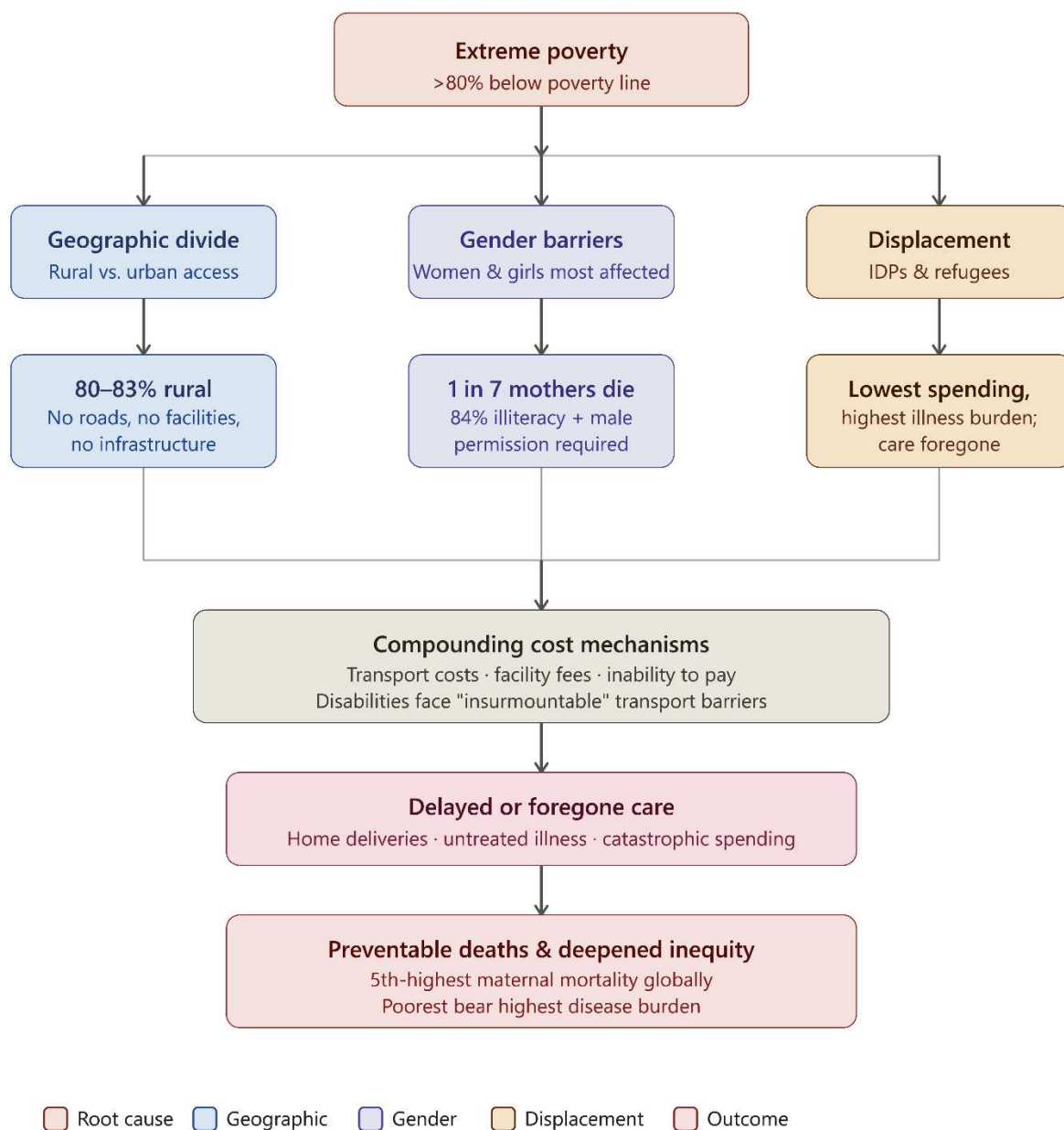


Figure 7: Equity, Poverty, and Socioeconomic Barriers Intersectional. A diagram illustrating how extreme poverty (affecting over 80% of South Sudan's population) interacts with four compounding axes of disadvantage, geographic rurality (80–83% of the population facing simultaneous infrastructure, financial, and distance barriers), gender inequality (1 in 7 women dying in childbirth; 84% female illiteracy; male gatekeeping of health expenditure decisions), forced displacement (IDPs facing peak health need alongside maximum financial constraint), and disability (insurmountable transportation barriers), to produce profoundly inequitable distributions of healthcare cost burden, with financial barriers directly contributing to preventable maternal mortality, excess morbidity among displaced populations, and systematic foregone care among the most vulnerable.

3.7 Theme 6: Supply-Side Cost Determinants

Demand-side financial barriers are compounded by supply-side deficiencies that effectively raise the total cost of accessing healthcare by reducing the availability, quality, and reliability of public sector services. The most pervasive supply-side cost determinant is the chronic shortage of essential medicines across public health facilities. The fragmentation of the pharmaceutical supply chain, operating through multiple parallel procurement systems by government, UN agencies, and NGOs without effective coordination, produces unpredictable stockouts that force patients to purchase drugs from private pharmacies at prices far exceeding their ability to pay (Abdalla et al., 2024; Achiek, 2023). In 2025, Health Pooled Fund (MSF) reported nationwide stockouts of malaria drugs during peak season for the second consecutive year, in a country where malaria is the leading cause of morbidity and mortality (Organization, 2023).

The critical shortage of qualified health workers is both a supply-side determinant and a cost amplifier. With an estimated density of 0.15 doctors and 0.25 nurses per 10,000 population (Sami et al., 2018), South Sudan's health workforce is entirely inadequate to meet population needs. (Abdelsalam, 2025) reported a physician-to-population ratio of 1 doctor per 65,574 persons and 1 midwife per 39,088 persons. Health worker shortages create long waiting times, reduce the quality and complexity of care available at facilities, and necessitate referrals to distant higher-level facilities. Each of these outcomes translate directly into increased indirect costs for patients. (Sami et al., 2018) found that participants universally reported the health workforce as insufficient and of low capacity, with access to medicines restricted by the government's lack of commitment to undertaking procurement and supply chain management.

The geographic distribution of facilities, which is heavily weighted toward state capitals and larger towns, creates structural access inequities that are indistinguishable in their effect from financial barriers. Only three of South Sudan's 78 counties, Kajo Keji, Yei, and Torit had reached the Ministry of Health target of 70% of the population within 5 km of a facility by 2016 (Macharia et al., 2017) For populations in the most remote counties of Upper Nile and Jonglei, fewer than 10% of residents were within this threshold, meaning that the de facto cost of accessing even nominally free services through transportation, accommodation, and opportunity costs was effectively prohibitive for the majority (Detzner, 2017). **Figure 8** illustrates Supply-Side Cost Determinants

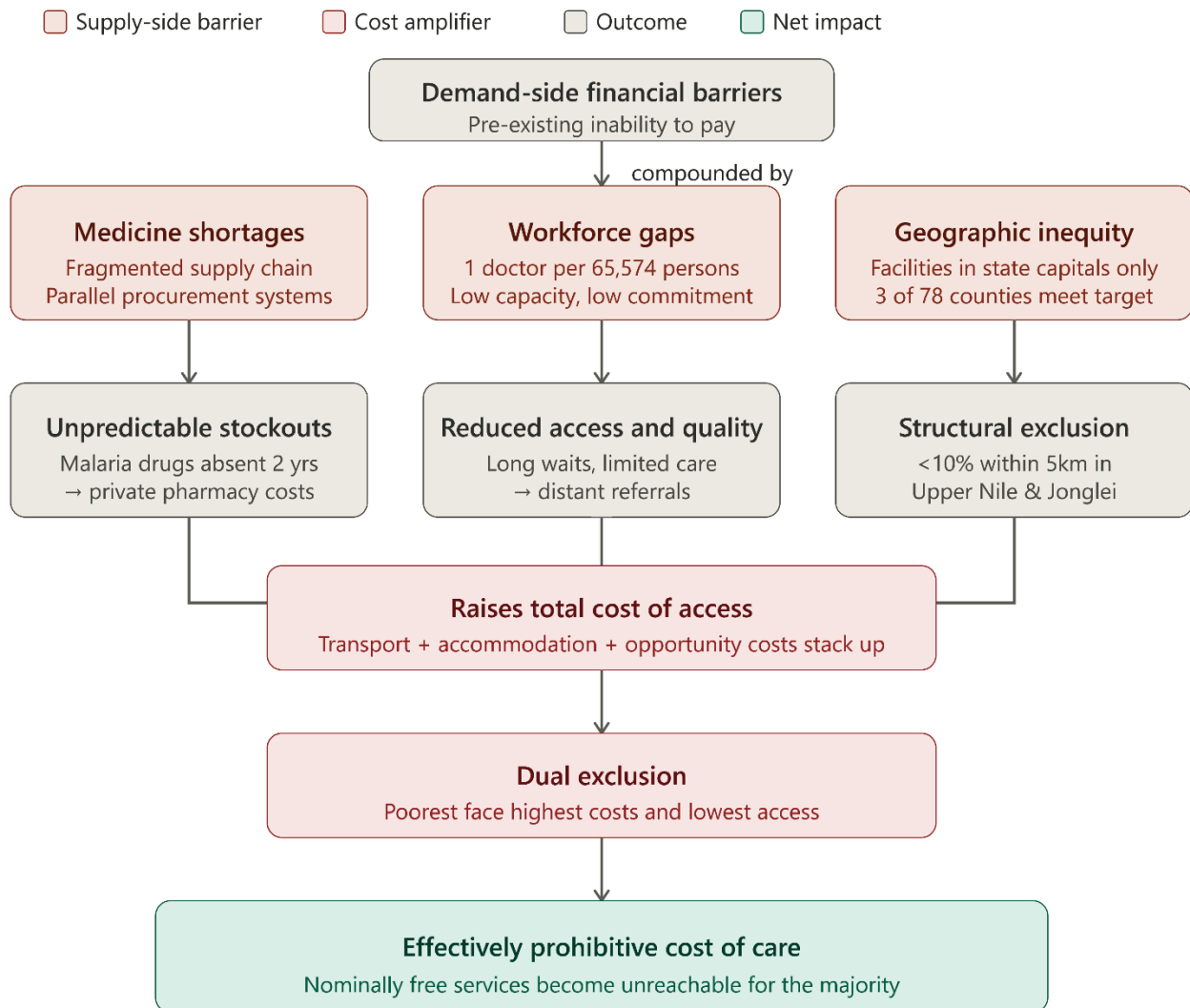


Figure 8: Supply-Side Cost Determinants. A diagram illustrating how three interconnected supply-side deficiencies, fragmented pharmaceutical supply chains producing chronic drug stockouts, a critically depleted health workforce (1 doctor per 65,574 persons), and heavily skewed geographic facility distribution favouring urban centres, compound demand-side financial barriers to effectively render nominally free public healthcare inaccessible and cost-prohibitive for the majority of South Sudan's population, particularly in remote counties of Upper Nile and Jonglei where fewer than 10% of residents live within 5 km of a facility.

3.8 Theme 7: Household Coping Mechanisms and Impoverishment

When households in South Sudan face health costs that exceed their immediate financial capacity, they resort to a range of coping strategies that have documented downstream effects on household welfare, food security, and poverty. The predominant coping mechanism reported across

qualitative studies is borrowing from relatives, community members, or informal moneylenders (KIT Royal Tropical Institute (2020). Guvele et al. (2012) noted that for South Sudanese households, the highest expenditure category was food (83% of respondents), followed by education and healthcare, underscoring the extreme scarcity of financial resources available for health. When faced with health costs, families frequently reduce food consumption, sell productive assets such as livestock or land, or withdraw children from school to reduce household expenditure, all of which perpetuate the cycle of poverty and vulnerability (Detzner et al., 2017).

A critical and frequently overlooked dimension of financial coping in South Sudan is the practice of care foregone, choosing not to seek care at all because cost barriers are judged insurmountable (Cross & 2023, 2017). This behavior is rational from the perspective of households facing a choice between healthcare expenditure and food security, but it carries significant health consequences, including delayed presentations of treatable illnesses, increased severity and complications, and excess preventable mortality as illustrated in **Figure 9**. The widespread availability of free MSF and HPF services mitigates but does not eliminate this dynamic, particularly in areas beyond the geographic reach of humanitarian organizations (Widdig et al., 2021).

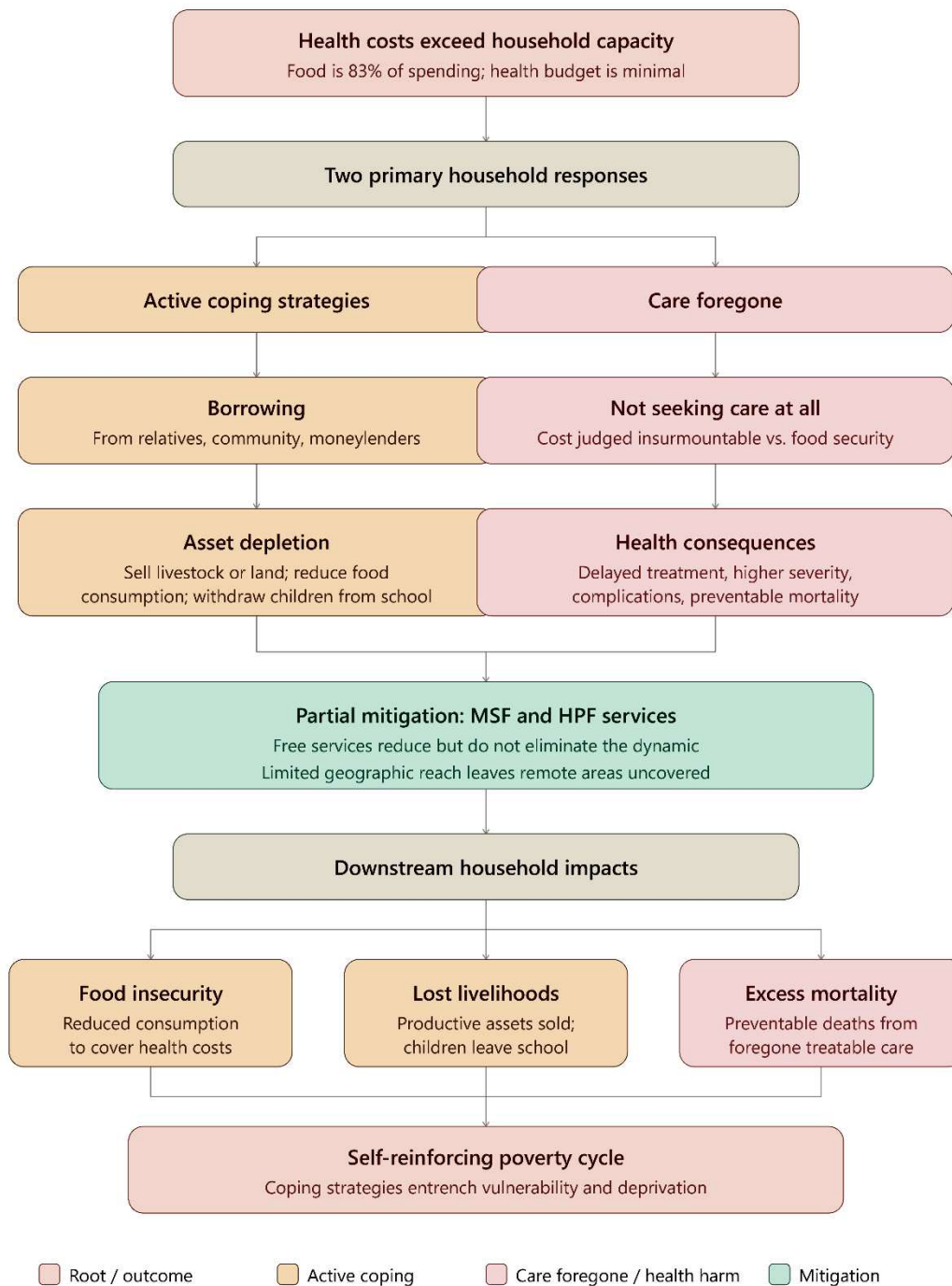


Figure 9: Household Coping Mechanisms and Impoverishment. A diagram showing the dual household response to unaffordable health costs in South Sudan, active coping strategies (borrowing, asset depletion, school withdrawal) and care foregone, and their convergence into a self-reinforcing cycle of food insecurity, lost livelihoods, and excess preventable mortality, partially mitigated but not resolved by MSF and HPF service provision.

3.9 Theme 8: Humanitarian and NGO Interventions

The humanitarian sector, principally Médecins Sans Frontières (MSF), World Health Organization (WHO), United Nations Children's Fund (UNICEF), International Rescue Committee (IRC), International Medical Corps (IMC), International Organization for Migration (IOM), and faith-based organizations constitute the de facto health system for a large proportion of South Sudan's population. MSF, which has maintained a continuous presence in South Sudan since 1983, operated 12 regular and 5 emergency projects in 2024, covering Unity, Jonglei, Upper Nile, Western Bahr el Ghazal, Central Equatoria, and Lakes States (MSF, 2025a). These organizations deliver services free at the point of care, thereby eliminating direct OOP costs for beneficiary populations. However, geographic coverage remains limited to areas within reach of humanitarian supply chains and staff, leaving significant gaps in remote and conflict-inaccessible areas.

The Health Pooled Fund represents the single largest financing mechanism for primary healthcare delivery in South Sudan and has been instrumental in maintaining service continuity across eight of ten states. (Federspiel et al., 2024) described the HPF as "the only way to finance health services" in South Sudan, with its single-lead-NGO-per-county model improving coordination and building county-level governance capacity. However, the HPF's dependence on a small number of bilateral donors renders it acutely vulnerable to donor policy changes. The 2022 UK funding cuts, which reduced the HPF budget by 24% and suspended 220 facilities without a transition plan demonstrated the life-threatening consequences of such volatility (Petrikova et al., 2022). Recent data indicate that due to funding constraints, the current Health Sector Transformation Project supports only 816 of its originally planned 1,158 facilities, with persistent shortages of medicines and staff across even supported facilities (MSF, 2025b).

The long-term sustainability of humanitarian-financed healthcare remains a fundamental concern. The EU Trust Fund for Africa's support of the HPF Phase 3 explicitly recognized the fragility of this dependence and sought to support the transition from humanitarian relief to longer-term health system development (Dang Dao et al., 2021). However, the structural conditions required for this transition remain absent in South Sudan as illustrated in **Figure 10**. These conditions include adequate domestic revenues, political stability, a functional public administration, and a trained health workforce. As a result, the exit of humanitarian actors from their de facto role in the health system remains a remote prospect without fundamental political and economic transformation (WHO Regional Office for Africa, 2024).

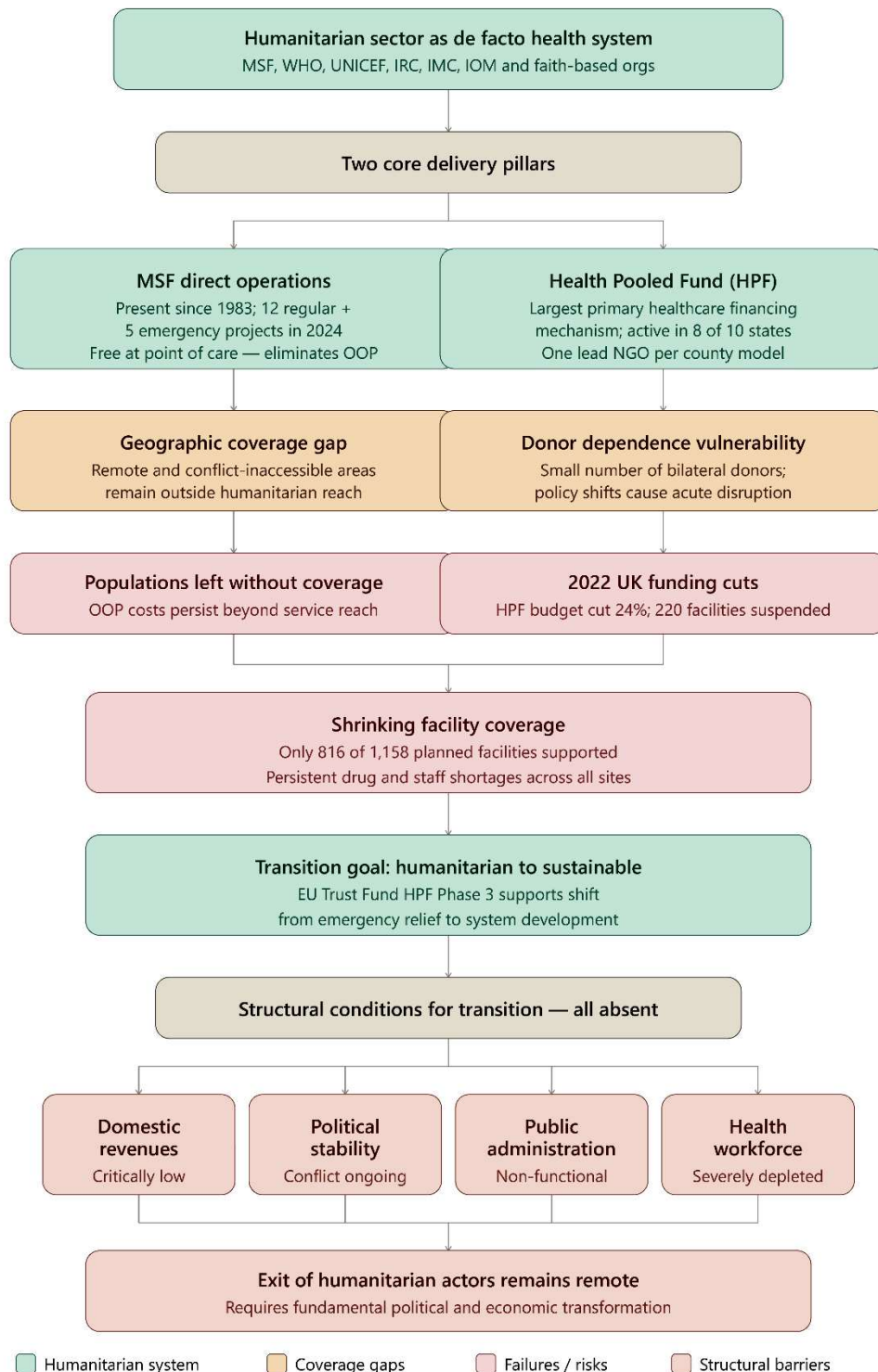


Figure 10: Humanitarian and NGO Interventions. Structural flowchart mapping the humanitarian sector's role as South Sudan's de facto health system, illustrating the geographic coverage limitations of MSF operations and the Health Pooled Fund's acute donor-dependence vulnerability, demonstrated by the

2022 UK funding cuts that suspended 220 facilities, alongside the four absent structural preconditions (domestic revenues, political stability, public administration, trained workforce) that make transition to a sustainable national health system a remote prospect.

4. Discussion

4.1 Principal Findings

This systematic scoping review has produced the first comprehensive synthesis of evidence on cost-associated factors of healthcare access in South Sudan. The evidence, though heterogeneous in design and quality, converges on a consistent narrative: cost barriers in South Sudan are systemic, multidimensional, deeply inequitable, and intimately linked to the country's experience of protracted conflict, extreme poverty, and structural dependence on external humanitarian financing. Four principal findings emerge from the synthesis.

First, out-of-pocket expenditure is catastrophic in relative terms for the vast majority of South Sudanese households. The finding that OOP spending constitutes approximately 54% of total health expenditure in a country where 80% of the population lives below the poverty line implies that health costs routinely push families beyond the thresholds at which spending is universally defined as catastrophic (Abdalla et al., 2024). This conclusion is consistent with the broader sub-Saharan African evidence base. Njagi et al., (2018) found that catastrophic health expenditure was widespread across sub-Saharan Africa. The main causes were poverty, type of healthcare provider, and lack of insurance. All of these are key features of the healthcare system in South Sudan (Njagi et al., 2018)

Second, transportation costs and geographic inaccessibility function as indirect financial barriers of comparable or greater magnitude than direct OOP payments for much of the population. The finding that 71% of South Sudanese live beyond a one-hour walking distance of the nearest health facility (P. M. Macharia et al., 2017) is not merely a spatial planning concern, it translates directly into financial barriers through transportation costs, opportunity costs, and food and accommodation expenditures during multi-day journeys. This dimension of cost has received insufficient attention in both the academic and policy literature relative to its demonstrated impact on health-seeking behavior.

Third, the near-complete absence of formal health insurance or financial risk protection mechanisms leaves South Sudanese households uniquely vulnerable to the impoverishing effects of health costs. With insurance coverage at approximately 7.7% (Salim et al., 2018b) and no operational national scheme, the population is entirely exposed to OOP financial shocks. The evidence from sub-Saharan Africa cautions, however, that introducing national health insurance in the absence of a functioning health system may not improve UHC outcomes and could fragment financing further (Cashin et al., 2021). South Sudan's priority, therefore, must be building the foundational health system conditions which include adequate facilities, drug supply, and workforce that would make insurance effective.

Fourth, equity is severely compromised as women, rural populations, IDPs, persons with disabilities, and those in conflict-affected states face systematically higher cost burdens and worse access outcomes. This distributional pattern is consistent with the broader literature on financial barriers in fragile and conflict-affected states (FCAS), where conflict exacerbates pre-existing structural inequities rather than creating new ones (Pasquier et al., 2023). Closing these equity gaps requires targeted interventions including demand-side subsidies, gender-sensitive programming, and prioritized service delivery to displaced populations that go beyond system-wide financing reforms.

4.2 Comparison with Evidence from Similar Fragile Settings

South Sudan's cost-barrier profile shares important features with other FCAS, particularly the Democratic Republic of Congo, the Central African Republic, Somalia, and Yemen. In each of these settings, OOP spending constitutes a dominant share of total health expenditure in the context of collapsed government financing, humanitarian actors substitute for the state in delivering primary care, geographic barriers amplify financial barriers, and equity gaps are severe and growing (Pasquier et al., 2023). However, South Sudan is distinctive in the near-total scale of its external dependence and in the relative recency of its state formation, which means that even the institutional foundations for a national health financing system are largely absent.

The experience of Rwanda, which has substantially reduced OOP payments and expanded financial risk protection through its Mutuelle de Santé community-based health insurance scheme operating alongside strong central government financing, is frequently cited as a model for sub-Saharan Africa (Cashin et al., 2021). However, the conditions enabling Rwanda's success including political stability, strong government commitment, a functioning administrative apparatus, and sustained domestic revenue are precisely the conditions that South Sudan currently lacks (Binagwaho et al., 2015). More instructive comparisons may be found in Afghanistan and Liberia, where post-conflict health system reconstruction was achieved through sustained multi-donor coordination, phased transitions from emergency to development financing, and investment in community health worker programs as the primary vehicle for extending cost-free services to remote populations (Higgins-Steele et al., 2018).

4.3 Policy Implications

The findings carry several specific implications for health policy in South Sudan and for its donor and humanitarian partners. For the Government of South Sudan, the evidence strongly supports: (1) a dramatic increase in the domestic public allocation to health, from the current 0.4–1.1% to at least the Abuja Declaration commitment of 15% of government expenditure Helene Barroy (2016); (2) the development and implementation of explicit user-fee exemption policies for essential services, particularly maternal and child health services, with mechanisms to monitor compliance and prevent informal payments; (3) investment in a national pharmaceutical supply chain agency with the mandate and resources to eliminate chronic drug stockouts; and (4) a

612 commitment to designing and piloting a community-based or national health insurance framework
613 adapted to South Sudan's predominantly informal and agrarian economy.

614 For donor governments and multilateral organizations, the evidence supports: (1) sustained, long-
615 term financial commitment to the Health Pooled Fund and comparable mechanisms, with multi-
616 year funding agreements that provide program continuity; (2) avoidance of abrupt funding cuts
617 without transition plans, which carry documented life-threatening consequences; (3) investment in
618 the humanitarian-development nexus by ensuring that humanitarian health interventions
619 progressively build the foundations for sustainable state-led health systems; and (4) prioritized
620 financing for equity interventions targeting women, IDPs, and remote rural populations.

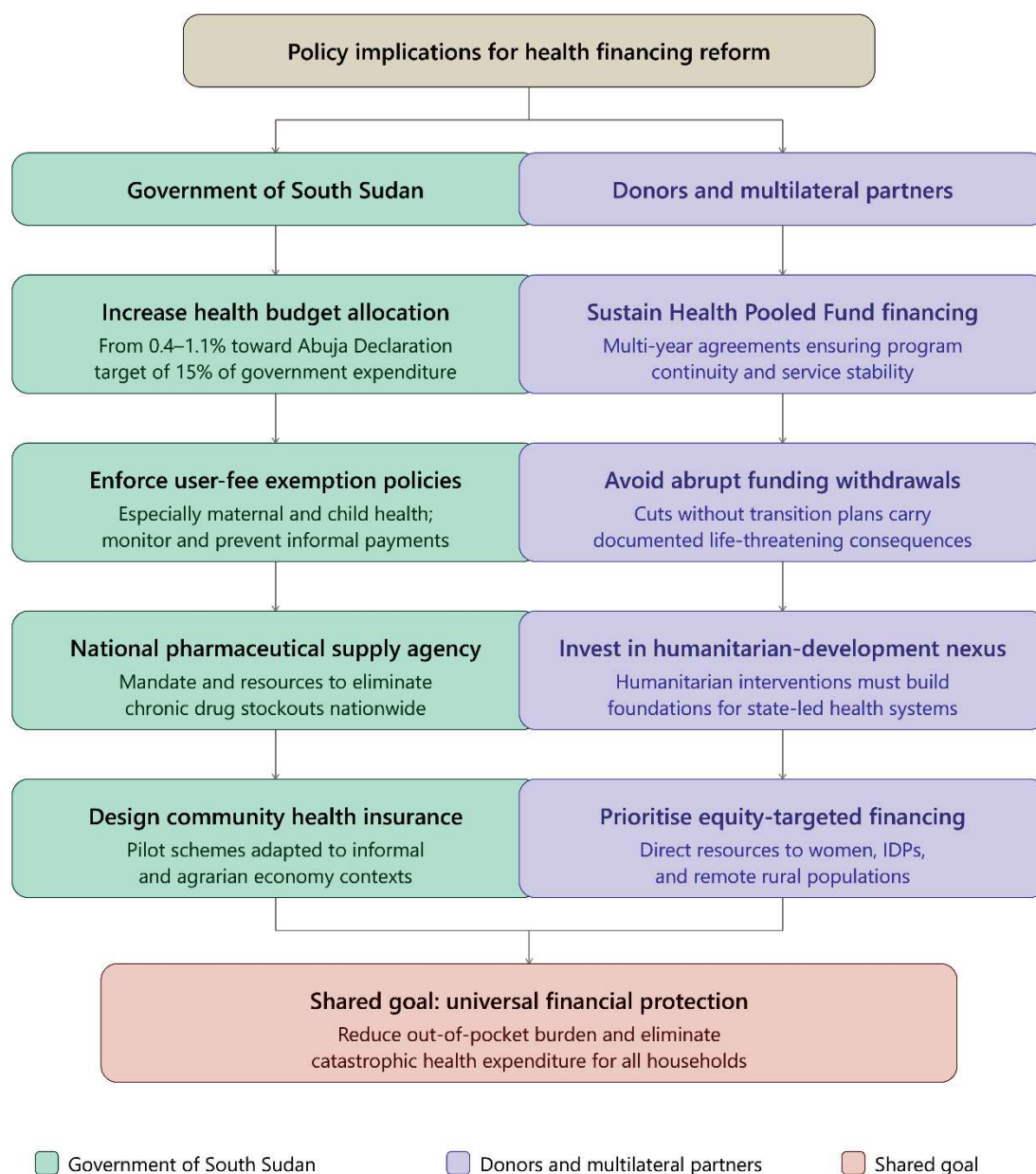


Figure: Policy Implications for Health Financing Reform. A diagram mapping four matched policy recommendations directed at the Government of South Sudan (budget increase, user-fee enforcement, pharmaceutical supply reform, community insurance) and donor partners (sustained HPF financing, avoidance of abrupt cuts, humanitarian-development nexus investment, equity-targeted funding), converging on the shared goal of universal financial protection.

4.4 Strengths and Limitations

This review has several strengths. It represents the first systematic synthesis of evidence on cost-associated healthcare access barriers specific to South Sudan, drawing on a comprehensive multi-source search strategy that included grey literature critical to capturing evidence from this understudied context. The thematic synthesis framework enabled integration of quantitative, qualitative, and policy evidence into coherent, policy-relevant narratives. The use of PRISMA-ScR guidelines ensures methodological transparency and reproducibility.

Limitations include the following. First, the evidence base is characterized by significant publication bias, with the majority of studies concentrated in Juba and Central Equatoria and severely under-representing the most remote and conflict-affected states. Second, nationally representative household expenditure surveys, which is the gold-standard source for CHE estimates are largely absent from South Sudan, precluding precise quantification of the incidence and depth of catastrophic health spending. Third, the heterogeneity of study designs, populations, cost outcome definitions, and data collection periods limits the comparability of cost estimates across studies. Fourth, the rapidly changing conflict and humanitarian context means that evidence from earlier periods may not fully reflect current conditions.

5. Conclusions

Cost-associated barriers to healthcare access in South Sudan are among the most severe, multidimensional, and deeply inequitable of any country in the world. Out-of-pocket expenditure is catastrophic relative to household income for the vast majority of the population; transportation costs and geographic inaccessibility impose indirect financial barriers of comparable severity; formal financial risk protection mechanisms are virtually absent; and the structural drivers of these barriers including conflict, poverty, government underfunding, and chronic drug shortages have persisted for decades without fundamental resolution.

Progress towards Universal Health Coverage in South Sudan requires urgent, coordinated, and sustained action on multiple fronts: dramatically increased domestic public financing for health; elimination of informal payments and implementation of explicit fee exemption policies for essential services; sustained and predictable donor commitment to humanitarian and development health financing; investment in pharmaceutical supply chains and health workforce capacity; and targeted equity interventions for women, displaced populations, and those in remote geographic areas. The humanitarian-development nexus must be actively bridged to ensure that emergency healthcare delivery progressively builds the institutional foundations for a sustainable, government-led health system.

Major evidence gaps remain that must be addressed through future primary research: nationally representative household surveys measuring catastrophic health expenditure and its determinants; disaggregated cost data by gender, geographic zone, and displacement status; rigorous evaluations of financial protection interventions in conflict settings; and longitudinal studies examining how cost barriers evolve across different phases of conflict and post-conflict transition. Until these gaps are filled, evidence-based health financing policy in South Sudan will continue to rest on an inadequate empirical foundation.

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685 Not applicable.

686 **Ethical Approval and Accordance**

687 Not applicable

688 **Consent to participate**

689 Not applicable.

690 **Authors' contributions**

691 **K.D.E.D.** conceptualized the study, developed the review protocol, conducted the literature search,
692 screened articles, extracted and analyzed data, and wrote the original manuscript draft. **R.O.A.**
693 contributed to study design, supervised the review process, validated data extraction and analysis,
694 and critically reviewed the manuscript. **B.E.S.D.** contributed to study design, interpretation of
695 findings, and manuscript review. **R.L.** participated in article screening, data extraction, and
696 manuscript review. **B.A.P.** contributed to data extraction, interpretation of findings, and manuscript
697 review. **W.K.P.** contributed to methodological development, data interpretation, and manuscript
698 review. **B.N.** contributed to study methodology, data interpretation, and manuscript review. **S.K.**
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