Policy Brief

Bridging the Gap Between Blood Supply and Demand in Zambia: Integrating Institutional Capacity with Community Realities

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Problem Statement

According to data from the Zambia National Blood Transfusion Service (ZNBTS), Zambia collected about 130,000 units of blood in 2023, roughly half of the national target of 260,000 units set for 2024 (1,2,13), despite blood being categorised as an "Essential Medicine." Despite the expansion of blood storage infrastructure to 20 blood hubs (two per province) alongside the 10 provincial blood centres (13), reliance on a seasonal donor pool (secondary school students), which contributes to over 30% of all blood donations in Zambia (3-4), creates supply volatility during school holidays, contributing to emergency social media appeals or replacement donations by families. Inadequate availability of safe blood may delay emergency transfusion and compromise the management of obstetric haemorrhage, trauma and other conditions requiring transfusion (5). Public reluctance to donate blood is driven by systemic barriers, including logistical inconveniences, uncertainty about where and when to donate, misconceptions and fear of adverse effects, as well as limited communication and donor follow-up where needed (3).

Policy Options Analysis

Option 1: Status Quo: Intensify current volunteer awareness campaigns. Feasibility: High. Impact: Low; fails to address seasonal fluctuation or adult donor apathy.

Option 2: Operational Expansion: Expand mobile collection units, workplace visits, appointment scheduling, reminders, and donor registry campaigns. Feasibility: Low. High recurring operational costs for MoH (fuel, fleet maintenance, staff per diems, mobile equipment, and software development). Impact: Moderate; improves convenience but relies on increasing the MoH operational budget and subsidies.

Option 3: Monetary Incentives: Direct cash payments for blood units. Feasibility: Low. Impact: High initially, but creates significant ethical risks and budget strain for the Ministry of Health (MoH).

Option 4: Social Reciprocity (Proposed for Evaluation): Non-cash (transport discounts, priority queueing), structural incentives for repeat donors. Feasibility: Moderate (Requires inter-agency data sharing between ZNBTS, HMIS, NRFA, and ZRA). **Impact:** Potentially high, subject to evaluation; intended to create a sustainable, adult-centred donor base with potentially lower direct cash requirements for the MoH if transport concessions are funded by private partners as tax-deductible CSR via ZRA. While recurring discounts constitute in-kind benefits under strict World Health Organisation (WHO) voluntary non-remunerated blood donation (VNRBD) definitions, this model provides a pragmatic, potentially lower-cost alternative to direct cash commercialization (6).

This brief distinguishes between non-cash recognition, reimbursement of legitimate donor expenses, and incentives that may influence voluntary donation, because these carry different ethical and policy implications and are not used interchangeably

Proposed Policy Option for Evaluation: The China-Zambia Hybrid Model

China's "Three-Exemption" policy promotes voluntary blood donation through non-cash benefits such as public transport and public service concessions (7). Although an initial pilot in Zhejiang province in 2014 saw limited uptake possibly linked to inadequate publicity and inconvenient use of the benefits (7). A 2026 quasi-experimental study across 30 provinces found a 3.55% increase in blood donations after two years and 7.70% after five years, without a significant change in donor eligibility rates (8). Backed by national guidance issued in 2024 (9), cities like Nanjing continue to provide transport, public-service and other recognition benefits to eligible donors (10).

The following are the suggested incentives for the China-Zambia Hybrid Model:

1. **Transport Reciprocity:** Partnering with RTSA, NRFA, and private bus companies to provide a 25-50% public transport discount via Donor Honour Cards for those providing 3+ units annually. The eligibility threshold of three or more donations per year should be justified and confirmed to be consistent with national donor eligibility requirements, including minimum intervals between donations and differences in eligibility by donor characteristics; the scheme must not pressure donors to donate more often than is medically appropriate. This shifts the focus from 30% students to commuters' benefit. Possibly diversifying the donor pool.

2. **Clinical Reciprocity:** Evaluating, as a pilot option, a Donor Priority Queue in government health facilities for non-emergency outpatient and basic diagnostic services. Access to care should continue to be determined by clinical need rather than donor status, with emergency and clinically urgent patients always attended first. Any such arrangement would need to preserve fair access to services, protect patient rights, and be shown to be consistent with national blood donation policy and WHO principles before wider adoption.

3. **Family Security:** Establishing a Family Safety Net that offers streamlined coverage for active donors and their immediate families within established clinical protocol, directly reducing reliance on panic-driven social media replacement appeals while ensuring emergency allocation remains strictly governed by medical urgency.

Strategic Implementation and Economic Argument

This framework is intended to limit direct cash outlays by the MoH, but donor verification, information system integration, monitoring, administration and possible changes to tax arrangements may still carry financial costs. A costed implementation plan is needed to assess its financial feasibility:

1. **Funding and Subsidies:** Transport discounts are absorbed as tax-deductible Corporate Social Responsibility (CSR) initiatives by private public bus operators via the Zambia Revenue Authority (ZRA).

2. **Inter-agency Integration:** Implementation relies on data sharing, linking ZNBTS donor records with hospital management information systems (HMIS), RTSA, and NRFA to automate Honour Card verification.

3. **Adopt Digital Impact Tracking:** Network providers utilise automated SMS dispatches to track and notify donors when blood is utilised. A study in Australia of a personalised post-donation SMS informing donors where their blood had been sent found higher 12-month return rates among recipients than non-recipients (70.3% versus 62.6%; adjusted odds ratio 1.49) (11), and a randomised trial in China found that SMS reminders prompted inactive donors to return sooner (12). The effect of such notifications on donor retention in Zambia has not been established and should be assessed during the pilot.

Actionable Recommendation for the MoH

Initiate a 12-month pilot project in high-density urban areas such as Lusaka and the Copperbelt to evaluate feasibility, donor retention, equity safeguards, and clinical triaging before full national implementation.

If the pilot proves fruitful, next steps would be to:

1. **Directive:** Issue a joint portfolio framework (MoH, Ministry of Transport, and Ministry of Finance) to formalise CSR tax incentives for participating transit networks.

2. **Integration:** Mandate the immediate linkage of ZNBTS donor databases with national HMIS/SmartCare systems to deploy priority donor services for non-emergency outpatient visits and basic screening and diagnostic protocols.

3. **Surveillance:** Task the ZNPHI to utilise mandatory blood screening data as a dual-use surveillance tool for tracking national Malaria and Hepatitis trends (4).

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