COMMENTARY

Systems, Not Resources Alone: Rethinking the Health Crisis in Low- and Middle-Income Countries

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ABSTRACT

Health challenges in low- and middle-income countries (LMICs) are frequently framed as consequences of insufficient funding, infrastructure and workforce. These constraints matter, but the impact of health investments also depends on the strength of underlying systems. Weak governance, fragmented service delivery, poorly integrated programmes, inadequate financing mechanisms, workforce maldistribution and limited use of data can prevent resources from translating into better outcomes. This commentary argues that resource constraints and system weaknesses are mutually reinforcing, and that sustainable progress towards universal health coverage requires stronger system design, stewardship, accountability and learning. Drawing on established health-systems frameworks and examples relevant to Zambia and sub-Saharan Africa, it highlights the need for integrated, resilient and adaptive systems that convert investments into equitable, high-quality care.

INTRODUCTION

The health crisis in low- and middle-income countries (LMICs) is often described as a problem of scarcity: insufficient funding, inadequate infrastructure and critical shortages of trained personnel.[1] These constraints are real and should not be minimised. However, they do not fully explain why similar levels of investment may produce very different health outcomes across settings, or why new infrastructure, workforce expansion and disease-specific funding sometimes fail to translate into sustained improvements in access, quality and equity.

The central argument of this commentary is therefore not that resources are unimportant, but that resources and systems must be understood together. While resource constraints remain important determinants of health outcomes, weaknesses in health-system design, governance, integration, financing and accountability often limit the effectiveness of available resources and contribute substantially to persistent health challenges in LMICs.[2,3] A resource-only framing risks directing policy attention towards visible inputs while

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Keywords: Health systems strengthening; Universal health coverage; Governance; Health financing; Zambia; Low- and middle-income countries

This article is available online at: http://www.mjz.co.zm, http://ajol.info/index.php/mjz, doi: https://doi.org/10.55320/mjz.53.3.1124
The Medical Journal of Zambia, ISSN 0047-651X, is published by the Zambia Medical Association

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neglecting the institutional arrangements required to convert those inputs into reliable, high-quality care.

The urgency of this argument has increased in the post-COVID-19 period. Global monitoring reports indicate that progress towards universal health coverage has slowed and that catastrophic out-of-pocket expenditure remains a major concern in many settings.[4] At the same time, global health spending patterns have shifted as countries emerge from the pandemic, with renewed pressure to use limited public, donor and household resources more effectively.[5] The question for LMICs is therefore not only how much to invest in health, but how to design, lead and sustain systems capable of translating investment into equitable health gains.

Health systems as more than resources

For the purposes of this commentary, a health system is understood according to the World Health Organization framework comprising service delivery, health workforce, health information systems, access to essential medicines and technologies, financing, and leadership/governance.[1] Health systems may also be viewed as complex adaptive systems in which policies, institutions, providers, communities and resources interact in ways that influence performance over time.[2] Resources constitute essential inputs into health systems; systems determine how these inputs are organised, coordinated, monitored and translated into outcomes.

This distinction is important because the presence of resources does not automatically guarantee effective care. A hospital building does not ensure safe referral pathways; a trained professional cannot deliver specialist care without equipment, supervision, drugs, theatre access and functioning teams; and a budget allocation may not protect households from catastrophic expenditure unless pooled, purchased and accounted for effectively. The high-quality health systems framework similarly emphasises that health gains require competent care, positive user experience, population confidence and system capacity to improve.[3] Analyses of amenable mortality likewise show that poor-quality health systems account for a substantial burden of preventable deaths in LMICs.[6] In this sense, health-system performance is not the sum of resources alone, but the product of how those resources are governed and connected.

Fragmentation and governance

Fragmentation is a defining feature of many LMIC health systems. Donor-supported vertical programmes targeting HIV, tuberculosis, malaria, immunisation, maternal health and other priority conditions have contributed substantially to improvements in population health and have strengthened laboratory capacity, procurement systems, workforce training and disease surveillance in many countries.[7,8] However, when such programmes are implemented through parallel reporting structures, supply chains, financing mechanisms and supervision systems with limited integration into national platforms, they may unintentionally contribute to duplication, competing priorities and inefficiencies.

The challenge is therefore not vertical programming itself, but poor integration with national systems. Disease-specific accountability should be preserved, but programme design should strengthen rather than bypass core health-system functions. Integration without accountability may dilute programme performance; verticalisation without stewardship may weaken the broader system. A stronger policy position is to integrate disease-specific programmes into primary health care, referral networks, laboratories, supply chains and routine information systems while retaining measurable disease outcomes.

Governance and leadership failures further exacerbate these challenges. Policy documents and strategic plans in LMICs are often comprehensive and aligned with global standards, yet implementation may be weakened by limited management capacity, insufficient accountability, unstable financing and weak institutional feedback loops.[9,10] In some settings, institutional decision-

making may be influenced by administrative, political or historical considerations that do not always align fully with available evidence or population health priorities. The result is a gap between policy intention and service reality: hospitals remain overcrowded, referral networks unreliable, medicines inconsistently available and adverse outcomes insufficiently used for system learning.

Workforce and financing as system challenges

Human resources illustrate why systems matter as much as numbers. Expanding the health workforce is essential, but workforce quantity alone does not resolve maldistribution, retention, supervision, absenteeism, skills mix or career-progression challenges. Highly trained professionals often remain concentrated in urban tertiary centres, while rural and peripheral facilities lack access to specialist services and timely referral. International migration is important, but internal system failures, poor working conditions, weak professional support and limited management capacity also contribute to workforce instability.

The WHO health workforce support and safeguards list highlights countries facing the most pressing workforce challenges related to universal health coverage, including low densities of doctors, nurses and midwives and lower UHC service coverage.[11] This reinforces the need for workforce policy that goes beyond training more staff. Deployment, retention, supportive supervision, task-sharing, specialist outreach, continuing professional development and institutional leadership are all system functions that determine whether workforce investments improve care.

Health financing provides another example of systemic dysfunction. Increased spending may be necessary, but it is insufficient where pooling is weak, purchasing is passive, financial accountability is limited and households continue to pay directly at the point of care.[4,5] Out-of-pocket expenditure can delay care, worsen poverty and reduce trust in public services. Universal health coverage requires institutions capable of mobilising funds, pooling risk, purchasing strategically and protecting households from financial hardship while improving quality.

Data, learning and accountability

A persistent weakness across many LMIC health systems is the limited use of routine data for decision-making. Health information systems may collect large volumes of data, but these data are often incomplete, delayed, under-analysed or poorly linked to management action. Clinical audits may be irregular, adverse events may not trigger system-level review and performance indicators may remain disconnected from budgeting, supervision and quality improvement.[12] Without functional feedback loops, systems cannot learn from failure or adapt to changing needs.

Learning health systems are therefore central to the future of LMIC health-system reform. A learning health system routinely collects data, converts it into actionable knowledge, tests improvements, feeds lessons back into practice and creates a culture in which accountability is linked to improvement rather than blame.[12] Crises such as pandemics, supply-chain shocks, workforce strikes and referral failures often reveal vulnerabilities that were already known but insufficiently acted upon. Building learning capacity at facility, district and national levels is therefore not a technocratic luxury; it is a prerequisite for resilience.

Zambia and sub-Saharan African context

These system challenges are directly relevant to Zambia and the wider sub-Saharan African region. Zambia's National Health Strategic Plan 2022-2026 frames progress towards quality universal health coverage around decentralisation and identifies equitable access, service integration, workforce strengthening, health financing, governance and information systems as key priorities.[13] These priorities illustrate that infrastructure, equipment and workforce inputs need to be accompanied by functioning referral systems, district management

capacity, reliable supply chains, clinical audit and routine use of data.

For Zambia and similar settings, the policy challenge is therefore not only to mobilise more resources, but also to strengthen the institutional arrangements that determine how those resources are deployed, coordinated, monitored and translated into equitable, high-quality care. This provides a practical basis for moving beyond a narrow resource narrative while maintaining the need for adequate and sustained investment.

Priority policy actions

The policy implications are clear but must be prioritised. First, governance and accountability mechanisms should be strengthened at national, provincial, district and facility levels. This includes clearer performance expectations, transparent decision-making, routine review of service outcomes and managerial authority matched with responsibility.

Second, disease-specific programmes should be deliberately integrated into broader primary healthcare and referral systems. Integration should not mean losing disease-specific targets; rather, it should mean that laboratories, supply chains, data systems, outreach platforms and supervision structures strengthen the wider system.

Third, leadership and health-systems management training should be institutionalised for clinical and administrative leaders. Senior roles in hospitals and districts require skills in quality improvement, budgeting, human-resource management, data interpretation, stakeholder coordination and accountability, not only professional seniority.

Fourth, health-financing reforms should prioritise risk pooling, strategic purchasing and financial protection. Increasing budgets without improving purchasing and accountability may perpetuate inefficiency, while well-designed purchasing can incentivise quality, equity and continuity of care.

Fifth, learning systems should be embedded in routine practice. Facilities and districts should regularly review deaths, complications, stock-outs, referral delays, patient experience and service coverage, then link those reviews to corrective action. Failure to learn from adverse outcomes is itself a system failure.

Finally, workforce reforms should address maldistribution and retention through targeted deployment, supportive supervision, rural incentives, specialist outreach, career pathways and protected continuing professional development. Training more health workers is necessary, but the system must also create conditions in which they can practise effectively and remain motivated.

CONCLUSION

The choice facing LMIC policymakers is no longer whether to invest in health, but how to ensure that investments produce equitable, high-quality and sustainable care. Resource constraints remain real and calls for stronger systems should not be used to justify underinvestment. However, framing the crisis as one of scarcity alone is strategically incomplete. Without strong systems, resources are inefficiently deployed, poorly coordinated and rapidly exhausted.

Systems, not resources alone, will determine whether future investments translate into improved health outcomes. LMICs do not need replicas of high-income country health systems; they need contextually appropriate, resilient and adaptive systems capable of coordinating care, managing resources effectively, learning from failure and protecting households from avoidable harm and financial hardship. Strengthening health systems is therefore a political, managerial and moral imperative at the centre of universal health coverage.

Declarations

Competing interests: The authors declare no competing interests.

Funding: No external funding was received for this work.

Authors' contributions

GM conceived the commentary and drafted the initial manuscript. AB critically reviewed the manuscript and contributed to revision of the intellectual content. Both authors approved the final manuscript for submission.

Acknowledgements: None.

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