ENDLESS

RESULTS FOR DEVELOPMENT

INTEGRATION OF PRIVATE DRUG VENDORS IN PRIMARY HEALTH CARE

Challenges & Opportunities in Low- and Middle-Income Countries

Results for Development & ENDLESS Health

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Overview

Private pharmacies and drug shops are ubiquitous in many countries and often the first point of care for primary healthcare services. But they are not well organized or integrated into overarching health system functions for governance, financing, and service delivery. This report reviews how health system planners can better leverage these providers for public health objectives as well as help improve and optimize their service offerings. It draws on desk research and consultations to synthesize ideas and opportunities for future support by policymakers and their global health partners on this topic in low- and middle-income countries.

Partners

ENDLESS Network is a global philanthropic organization investing in technology solutions to advance education and health equity in underserved communities. Through partnerships and innovation, it supports solutions, including digital tools, that strengthen healthcare access, telemedicine, and health workforce training in low-resource settings.

https://endlessglobal.com/

Results for Development (R4D) is a global nonprofit organization partnering with governments and stakeholders in low- and middle-income countries to strengthen systems for health, education, and nutrition. Using evidence-based approaches, R4D focuses on scalable solutions for universal health coverage, primary healthcare, and equitable access to essential commodities.

www.R4D.org

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List of Acronyms

ACT	Artemisinin-based Combination Therapy
ADDO	Accredited Drug Dispensing Outlet
AI	Artificial Intelligence
ARI	Acute Respiratory Infection
CHW	Community Health Worker
FP	Family Planning
HIV	Human Immunodeficiency Virus
ICDDR,B	International Centre for Diarrheal Disease Research, Bangladesh
LMICs	Low- and Middle-Income Countries
M4M	Merck for Mothers
MCH	Maternal and Child Health
MNCH	Maternal, Newborn, and Child Health
MOH	Ministry of Health
MSI	MSI Reproductive Choices (formerly Marie Stopes International)
NCD	Non-Communicable Disease
PCN	Pharmacy Council of Nigeria
PHC	Primary Healthcare
PMA	Performance Monitoring for Action
PPE	Public-Private Engagement
PPMV	Patent and Proprietary Medicine Vendor
PSI	Population Services International
QA	Quality Assurance
R4D	Results for Development
RDT	Rapid Diagnostic Test
RMP	Rural Medical Practitioner
SBC	Social and Behavior Change
SFH	Society for Family Health
UHC	Universal Health Coverage
USAID	United States Agency for International Development
VMIs	Vendor-Managed Inventory systems
WHO	World Health Organization

Executive Summary

Why pharmacies and drug shops matter: Private pharmacies and drug shops are often the first and most trusted point of care for people in LMICs, providing essential medicines, family planning, and basic health services. Yet they remain largely informal and disconnected from formal primary health care (PHC) systems—excluded from policies, financing, data, and oversight. As countries pursue universal health coverage, integrating these providers presents a timely and significant opportunity to expand access and strengthen mixed health systems.

A collaborative effort to reimagine integration: Endless Health and Results for Development (R4D) have partnered to explore how to mainstream pharmacies and drug shops into PHC systems in LMICs. This work draws on extensive literature review, consultations with country-level experts, and a convening of policymakers, implementers, funders, and private sector actors. The aim is to develop a clear, practical vision and agenda for action, grounded in country realities and geared toward system-level change.

Diagnosing the challenges: The report identifies six interrelated challenges that have impeded integration efforts to date:

- **Fragmentation and weak aggregation:** A largely informal landscape of providers limits the ability to organize, supervise, or contract these actors at scale.
- **Inconsistent quality and limited oversight:** Varying levels of training and poor regulatory enforcement erode trust and create safety risks.
- **Misaligned incentives and limited financing:** These providers are excluded from public payment schemes and supply chains, limiting their ability to serve as sustainable PHC actors.
- **Disconnected from formal PHC systems:** Pharmacies and drug shops are rarely included in PHC coordination, referrals, or essential service packages.
- **Data gaps and weak performance monitoring:** Minimal reporting and digital integration limit visibility and accountability.
- **Institutional and policy ambiguity:** Policy frameworks often overlook these actors or lack clear strategies for their engagement.

Strategic options and a pathway for reform: In response, the report lays out six strategic levers to drive reform—provider aggregation, quality assurance, financing and incentives, digital data systems, supervision and linkage, and policy integration. These levers are illustrated through a tiered provider model and a heat map of where innovations are already underway versus where gaps remain. A Theory of Change details how targeted activities and inputs can lead to systemic outcomes and long-term impact.

A call to action: The report concludes with an opportunity map outlining tailored roles for policymakers, funders, implementers, researchers, and the private sector—aligned to different country archetypes. Endless Health and R4D call on stakeholders to co-invest in bold experimentation, generate robust evidence, and support national reforms to fully harness the potential of pharmacies and drug shops in achieving equitable, high-quality PHC.

Introduction

Private pharmacies and drug shops are often the most accessible source of health care in many low- and middle-income countries (LMICs), especially for low-income and underserved populations. They are widely used for common illnesses, reproductive and maternal health needs, and increasingly, for non-communicable diseases. Despite their ubiquity and growing role in frontline care, these providers remain largely disconnected from formal primary health care (PHC) systems. As a result, countries miss a key opportunity to leverage their reach, familiarity, and responsiveness to support equitable, high-quality PHC.

This disconnect stems from longstanding challenges. Pharmacies and drug shops operate in fragmented markets with wide variation in quality, training, and regulation. Public health systems often lack the tools or incentives to engage with them, and financing mechanisms typically exclude them from reimbursement or reporting systems. The result is a large, underutilized cadre of providers delivering services in parallel to national systems, with limited oversight, learning, or public accountability.

Yet integration is both possible and urgent. Countries seeking to accelerate progress toward universal health coverage (UHC) increasingly recognize the need to harness all available health system resources—including those in the private sector. With appropriate stewardship, pharmacies and drug shops can be supported to deliver higher quality care, link with public systems, and contribute meaningfully to PHC goals. The question is no longer whether to engage them—but how.

Endless Health and Results for Development (R4D) have partnered to explore this question. Together, they have reviewed promising models of engaging drug vendors across LMICs, synthesized the key challenges and enabling factors, and consulted national stakeholders and their technical and funding partners to identify viable paths forward. This report condenses the main findings from that work—including a review of recent literature, expert consultations, and a stakeholder convening—to inform strategies for more deliberately integrating pharmacies and drug shops into the design and delivery of PHC.

1. Key Challenges to Integration of Pharmacies and Drug Shops in PHC Systems

Efforts to integrate private pharmacies and drug shops into national PHC systems face a range of persistent and interconnected challenges. These barriers are rooted in both public health system limitations and the characteristics of the pharmacy and drug shop markets themselves. While such providers are widely accessed for a range of essential health needs (see Annex 2), their contributions remain under-recognized and poorly leveraged in national strategies to advance UHC.

This section synthesizes the primary barriers to integration using two complementary frameworks:

- The **WHO health system building blocks**, which help to structure challenges across six domains: service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership and governance.

- R4D's **Strengthening Mixed Health Systems (SMHS) ecosystem framework**, which highlights the enabling environmental, structural, and engagement factors—both technical and relational—necessary for effective public-private collaboration.

Together, these frameworks reveal the complexity of the ecosystem in which pharmacies and drug shops operate and point to the multi-level reforms required to more deliberately integrate them into PHC systems. Table 1 below provides a summary of key challenges surfaced, followed by a brief description.

Table 1: Summary of key challenges to integration of pharmacies and drug shops in PHC systems

Challenge area	Relevant WHO building blocks	Summary of key issues
Fragmentation and weak aggregation	Governance, Service Delivery	- Providers are highly fragmented and informal - Lack of collective platforms for engagement - Lack of trusted intermediaries for coordination
Inconsistent quality and limited oversight	Health Workforce, Access to Medicines, Governance	- Large variation in training and compliance - Weak regulatory enforcement, especially in rural areas - Unlicensed or low-capacity providers widespread
Misaligned incentives and limited financing	Financing, Governance	- Retail model drives product sales over service quality - Exclusion from public financing and insurance schemes - No incentives aligned to PHC outcomes
Disconnected from formal PHC systems	Service Delivery, Information Systems	- No links to referral, reporting, or supervision systems - Invisible in public sector planning and quality assurance
Data gaps and weak performance monitoring	Health Information Systems	- Lack of reliable, centralized data on provider numbers, practices - No performance tracking or integration into HIS platforms

Institutional and policy ambiguity	Leadership and Governance	- Fragmented mandates across multiple agencies - Limited policy clarity on engagement pathways - No institutional home for sustained reform

I. Fragmentation and weak aggregation (Governance, Service Delivery)

Private pharmacies and drug shops are often numerous, independently owned, and loosely regulated. They operate outside formal networks and lack mechanisms for collective engagement with government or donors. This high degree of fragmentation makes it difficult to coordinate, standardize, or improve service delivery at scale. In the SMHS framework, this reflects a weak "engagement structure," where there is no formalized partnership model or trusted broker to facilitate interaction between the public and private sectors.

II. Inconsistent quality and limited oversight (Health Workforce, Medicines, Governance)

There is wide variability in the training, competence, and practices of pharmacy and drug shop staff. Many operate without formal qualifications or outside the scope of legal authorization. Regulatory agencies often lack the capacity or resources to conduct meaningful inspections or enforce quality standards—particularly in rural and peri-urban areas. The absence of a strong policy mandate or political will to invest in regulation has led to inconsistent oversight, with high-quality providers operating alongside poorly trained or unlicensed actors.

III. Misaligned incentives and limited financing (Financing, Governance)

Most pharmacies and drug shops operate on a retail basis and rely on product margins for revenue. This creates incentives to oversell, dispense irrationally, or prioritize high-margin products. They are rarely eligible for public financing, results-based purchasing, or insurance reimbursement schemes, which could otherwise help align them with public health goals. The SMHS framework flags this as a structural and economic constraint: limited financial flows and unclear engagement rationales between actors contribute to poor accountability and misaligned priorities.

IV. Disconnected from formal PHC systems (Service Delivery, Information Systems)

Despite delivering a significant volume of care, pharmacies and drug shops are typically excluded from formal referral systems, supportive supervision structures, and health information platforms. Their contributions are not recorded, and their patients are not tracked—undermining continuity of care and making these providers invisible in system planning. From a systems perspective, they fall outside the formal service delivery architecture and lack even the informal mechanisms that could support coordination or shared learning.

V. Data gaps and weak performance monitoring (Information Systems)

There is little reliable data on the number, type, or distribution of pharmacies and drug shops, especially in informal or unregistered segments. Even in countries with pharmacy licensing systems, data are rarely centralized or used for planning purposes. Performance data—on availability of medicines, adherence to treatment protocols, or patient satisfaction—are largely absent. The absence of a shared information architecture or feedback loop makes integration and performance improvement extremely difficult.

VI. Institutional and policy ambiguity (Leadership and Governance)

Many countries lack clear national policies or institutional mandates for engaging pharmacies and drug shops as part of the PHC system. Where policies exist, responsibility is often fragmented—split between ministries of health, professional boards, and pharmacy councils—with little coordination or accountability. This leads to policy inertia and limits the scope for coherent reform. According to the SMHS ecosystem framework, this reflects a foundational gap in mandate, trust, and mutual understanding between public and private actors.

2. Strategic Options and Archetypes

Addressing the persistent challenges to integrating pharmacies and drug shops into PHC systems requires a reimagined approach—one that recognizes their current and potential roles, matches reform strategies to country realities, and builds practical pathways for progressive integration. This section outlines a strategic framing and set of archetypes to help countries—and their partners—navigate the diversity of their pharmacy and drug shop landscapes while identifying actionable entry points for reform.

2.1. A tiered ecosystem view: Recognizing the diversity of providers

Pharmacies and drug shops operate in a wide spectrum—from highly informal, rural drug vendors to well-established urban pharmacies with qualified pharmacists and digital inventory systems. Most countries feature a mix of these provider types, which vary not only in licensing and quality, but also in the populations they serve and the services they offer.

We highlight the **three-tiered ecosystem view** as a strategic organizing framework for integration efforts:

- **Tier 1**: *Informal or unlicensed drug sellers*, often in peri-urban and rural

Box A. A tiered integration model for drug vendors in Nigeria

In Nigeria, the Gates Foundation and Merck for Mothers have supported efforts to integrate private drug vendors into PHC systems through a program led by the Society for Family Health, the Pharmacy Council of Nigeria, and the Population Council. The initiative focuses on improving access to family planning services by strengthening the role of Patent and Proprietary Medicine Vendors (PPMVs) and community pharmacies.

A key innovation is the development of a three-tier model to categorize providers based on qualifications:

- **Tier 1**: PPMVs with formal health training (e.g., nurses, CHWs) who provide advanced services like injectables and implants.
- **Tier 2**: PPMVs with basic education and limited training.
- **Tier 3**: Least qualified providers, often in rural settings.

The program offers training, supervision, and policy support to improve service quality and expand scope. Piloted in Lagos and Kaduna (2017–2021), the model has informed national task-shifting policies and is now being scaled to nine additional states.

areas, with limited training and infrastructure. Typically not integrated into any formal system.

- **Tier 2**: *Licensed drug shops or community pharmacies* with basic regulation but limited links to PHC supervision, reporting, or financing.
- **Tier 3**: *Accredited, better-capacitated pharmacies* that could be networked or contracted into PHC systems with clearer quality assurance and accountability mechanisms.

This tiered model allows policymakers to map provider realities against potential strategies for engagement—acknowledging that different approaches may be needed for different segments.

2.2. Strategic levers for integration

The landscape review surfaced a set of strategic levers that countries can use—singly or in combination—to advance integration, depending on their policy priorities and system readiness:

- **Provider Aggregation**: Forming digital or physical networks to bring fragmented providers into a common platform for communication, supervision, and learning.
- **Quality Assurance and Accreditation**: Defining minimum standards for participation in public programs and creating stepwise pathways for improvement.
- **Financing and Incentives**: Linking pharmacies and drug shops to insurance schemes, subsidy programs, or performance-based incentives to align incentives with public health goals.
- **Data and Reporting Systems**: Establishing reporting mechanisms or APIs that allow for integration with national health information systems, even at a basic level.
- **Supervision and Referral**: Building connections to community health workers, PHC facilities, and referral systems to expand access and improve coordination.
- **Policy and Regulatory Reform**: Updating pharmacy acts and creating enabling policies for engagement—particularly where multiple authorities currently hold fragmented mandates.

2.3. Where innovation has flourished and where gaps remain

Across countries, innovation has typically clustered around a few areas—particularly in **digital supply chain solutions**, **aggregation platforms**, and **telemedicine-linked pharmacies**. For example:

- **In Kenya**, digital platforms like Maisha Meds are supporting real-time reporting, remote supervision, and quality assurance for private pharmacies—demonstrating how technology can enable integration with public systems.
- **In Nigeria**, the Pharmacy Council and partners like the Society for Family Health are piloting a three-tier model for PPMVs and pharmacies, with digital reporting, regulatory oversight, and linkages to task-sharing reforms at national and state levels.
- **In Indonesia**, franchise models such as Kimia Farma illustrate how private pharmacy chains with internal quality assurance and data systems can serve as a platform for structured engagement in PHC.

However, major gaps persist—particularly in areas like **formal referral and supervision systems**, **performance monitoring**, and **systematic inclusion in national financing schemes**. Innovations

are largely driven by market forces and donor-supported pilots, not public system integration or scale strategies. Table 2 below provides a snapshot of the relative strength of innovations across key strategic levers for integrating pharmacies and drug shops into PHC systems. The assessments are based on insights from key informant interviews (KIIs) and the original landscape review. Each country–lever pairing is classified as strong, intermediate, or weak, reflecting the depth and maturity of relevant innovations or systems in place. The table aims to highlight where promising models already exist and where further investment and experimentation may be needed.

Table 2: Strengthen of innovations across strategic levers for integrating pharmacies and drug shops in PHC

Strategic Lever	Ghana	Nigeria	Kenya	Bangladesh	Indonesia
Provider Aggregation	Intermediate – NHIS and MOH interested in engaging private providers; structures still fragmented.	Strong – Structured tiered model with state-level implementation and regulatory involvement (PCN).	Strong – Digital pharmacy networks mentioned in KIIs as operational with supervision integration.	Intermediate – Dispersed interest in private sector engagement but no consolidated aggregation platforms.	Intermediate – Some networks/franchises mentioned, but not yet formalized for PHC.
Quality Assurance & Accreditation	Intermediate – Discussions on standardization and policy-level improvements; implementation gaps remain.	Intermediate – Training and tiering system in place; full QA integration pending.	Strong – Use of digital QA tools and monitoring systems cited in interviews.	Intermediate – Recognition of need for QA; current enforcement limited.	Strong – Advanced licensing and chain model QA capacity noted.
Financing and Incentives	Weak – Financing inclusion in NHIS discussed but not operational.	Intermediate – Public-private financing approaches in FP piloted; still ad hoc.	Intermediate – KIIs mention efforts to include private providers in NHIF pilot mechanisms.	Weak – Out-of-pocket dominates; no evident integration into public financing.	Weak – No KIIs or reports of active pharmacy financing mechanisms.
Data and Reporting Systems	Intermediate – MOH interested in capturing private data, but no national solution yet.	Strong – SFH model includes real-time reporting; echoed in KII notes.	Strong – Real-time tools like Maisha Meds referenced; data linkage underway.	Weak – No consistent pharmacy data collection system noted.	Intermediate – Some internal systems exist; integration lacking.

Supervision and Referral	Weak – KIIs cite interest in linking CHWs and private providers, but structures not in place.	Intermediate – Pharmacy Council involved in PPMV supervision and learning loops.	Intermediate – Tools support remote supervision; referral still emerging.	Weak – No formal supervision or referral systems identified in review and KIIs	Intermediate – Some initiatives piloted but not scaled.
Policy and Regulatory Reform	Intermediate – Policy space exists, driven by UHC push; execution uncertain.	Strong – Task-sharing policy reform mentioned repeatedly, backed by implementation.	Intermediate – KIIs reference inclusion of pharmacies in PHC discourse.	Intermediate – Recent *Health Reform Commission* cited as recommending reform for private actors.	Strong – Regulatory frameworks and chain-based control supportive of integration.

This heat map could help funders and governments identify where to build on existing momentum versus where foundational work is still needed.

3. Developing an Opportunity Map for Stakeholders

The integration of pharmacies and drug shops into primary health care systems must be responsive to diverse country conditions. Factors such as regulatory maturity, provider informality, market consolidation, and existing public-private engagement mechanisms vary widely across settings—shaping what strategies are both feasible and impactful. To guide context-sensitive planning, the team has a set of country "archetypes" (described in box B) to cluster settings based on common features of their pharmacy and drug shop ecosystems. These archetypes—ranging from highly fragmented, informal markets to more consolidated, semi-regulated systems—help identify appropriate entry points and tailor engagement strategies. The opportunity map that follows in table 3 builds on this framing—offering concise, stakeholder-specific actions designed to align with country realities and catalyze progress across varied LMIC settings. It outlines tailored priority actions for five key stakeholder groups—policymakers, funders, implementers, researchers, and private sector actors—based on enabling conditions and country examples. The

Box B. Matching initiatives to country archetypes or contexts

Countries are at different starting points in terms of policy environment, provider capacity, and regulatory systems. The report suggests three broad country archetypes to guide reform planning:

- **Type A – Early-stage engagement**: Countries where pharmacies and drug shops are mostly informal or unregulated, with limited existing engagement (e.g., DRC, Madagascar).
- **Type B – Fragmented but emerging ecosystems**: Countries with a mix of licensed and informal providers, some digital experimentation, and growing policy interest (e.g., Nigeria, Bangladesh).
- **Type C – Structured markets with reform potential**: Countries with stronger provider capacity, active regulation, and aligned actors for PHC integration (e.g., Ghana, Indonesia).

Reform strategies—and the sequencing of strategic levers—should reflect these differences.

table aims to guide coordinated investment and action across actors, grounded in both landscape analysis and insights from key informant interviews.

Table 3: Opportunity map for stakeholders: strategies for integrating pharmacies and drug shops into PHC

Stakeholder	Priority actions	Enabling conditions	Illustrative countries/contexts (by archetype)
Policymakers	Establish **regulatory pathways** for licensing, supervision, and integration into referral networks Include pharmacies and drug shops in **essential medicines** distribution and **PHC-UHC** schemes Foster **interagency coordination** (health, pharmacy, procurement)	Reform momentum and leadership Platforms for multisectoral dialogue Availability of contextual data and technical support	**Archetype A**: Fragmented, informal, under-regulated (e.g., Bangladesh, Ghana) — policy frameworks emerging **Archetype B**: Semi-regulated with subnational innovation (e.g., Nigeria) — active reforms in licensing and task-sharing **Archetype C**: Consolidated, formally franchised/private chains (e.g., Indonesia) — scope to formalize linkages to PHC
Funders	Invest in **learning labs and challenge funds** to pilot scalable approaches Support **digital and AI systems** for aggregation, QA, and data reporting Catalyze country-driven reforms through **TA and multi-stakeholder engagement**	Local reform champions Government willingness to engage private providers Strong local implementation and digital ecosystem	**Archetype A**: Needs catalytic pilots to demonstrate feasibility (Bangladesh, Ghana) **Archetype B**: Ready for scale-up and system integration (Nigeria, Kenya) **Archetype C**: Mature digital or chain platforms to build from (Indonesia)
Implementers (NGOs, Social Enterprises, TA Partners)	Lead country-level **learning** labs and multi-stakeholder **coalitions** Strengthen private provider networks through **capacity** building & digital **tools**	Trust with local actors Operational adaptability	**Archetype A**: Focus on organizing fragmented providers and demonstrating value (Bangladesh, Ghana) **Archetype B**: Scale promising subnational models and share learning (Nigeria, Kenya)

	Broker **partnerships** with public sector for PHC inclusion	Funding to support experimentation and iteration	**Archetype C**: Embed in broader PHC integration and digital transformation efforts (Indonesia)
Researchers	Generate **evidence** on integration models (impact, cost-effectiveness) Support real-time **learning** and adaptive **evaluation** Produce **public goods** and policy-relevant **syntheses**	Embedded research opportunities Strong local partnerships Policymaker demand for evidence	**Archetype A**: High need for foundational evidence generation (Bangladesh, Ghana) **Archetype B**: Opportunities for evaluating large-scale pilots and influencing policy (Nigeria, Kenya) **Archetype C**: Scope for research on digital health models and quality assurance (Indonesia)
Private Sector (Pharmacies, Vendors, Franchises)	Join formal **networks** or initiatives Adopt **digital tools** for QA, referrals, and reporting Participate in **training** and **accreditation**	Regulatory clarity Incentives (e.g., inclusion in public supply or benefit schemes) Access to markets and support	**Archetype A**: Incentivize participation and offer basic structuring (Bangladesh, Ghana) **Archetype B**: Strengthen quality and formalization via digital and supervisory tools (Nigeria, Kenya) **Archetype C**: Engage chains in service delivery and essential medicines provision (Indonesia)

4. Theory of Change: A pathway to mainstreaming pharmacies and drug shops in PHC

The preceding sections of this report have outlined the persistent underutilization of pharmacies and drug shops in LMIC health systems, despite their frontline role in delivering medicines and care. Drawing on landscape analysis, key informant insights, and typologies of country contexts, the report identifies systemic challenges (Section 1), strategic levers and innovation gaps (Section 2), and a tailored opportunity map for action across stakeholder groups (Section 3). These insights point to a coherent and compelling logic for change—one that merits articulation through a structured Theory of Change (ToC).

Challenge ▶	Activities ▶	Inputs ▶	Outputs ▶	Outcomes ▶	Impact
Fragmentation and informality of pharmacy and drug shop markets	Country-level landscaping, actor mapping, and market analysis	Technical assistance teams; country partnerships; diagnostic tools	Context-specific profiles of pharmacy ecosystems and entry points	Deeper understanding of local dynamics and constraints	Informed, context-sensitive interventions to engage pharmacies and drug shops

Limited coordination and weak networks among providers	Establishment of learning labs and challenge funds to test aggregation and digital models	Flexible funding; digital tools; implementing partners	Pilot models of digitally supported provider aggregation	Improved provider coordination, data visibility, and performance	Pharmacies and drug shops function as organized and accountable service delivery nodes
Gaps in regulatory clarity and oversight mechanisms	Support policy dialogue and regulatory co-design processes	Multistakeholder coalitions; policy advisors; engagement platforms	Draft regulatory frameworks, task-shifting guidance, licensing strategies	Greater legitimacy, oversight, and safety in service provision	Formal inclusion of drug shops and pharmacies in PHC architecture
Exclusion from PHC financing, supply, and referral systems	Engage policymakers and funders to explore inclusion in PHC schemes and supply chains	Evidence from pilots; cost-effectiveness data; financing partners	Position papers, government commitments, and pilot schemes	Inclusion of these providers in national PHC and UHC plans	Sustained financing and operational integration into PHC systems
Lack of scalable learning and cross-country synthesis	Facilitate cross-country learning, documentation, and global engagement	Coordination support; communications resources; R4D-Endless platform	Case studies, synthesis reports, global convenings	Policy uptake, peer learning, global traction	Accelerated progress toward resilient, mixed health systems that reach people where they are

The ToC begins with a recognition of the status quo: fragmented, often informal pharmacy and drug shop ecosystems that operate at the periphery of formal PHC systems. With targeted inputs—such as robust diagnostics, cross-sectoral partnerships, digital innovations, learning labs, and catalytic financing—the program seeks to generate country-led experimentation and reforms. These activities are expected to yield outputs such as strengthened provider networks, regulatory pathways, and an evidence base for integration. Over time, these outputs will enable systemic outcomes: improved quality and accountability among private providers, expanded access to essential services and products, and stronger public-private alignment in PHC delivery. Ultimately, the ToC envisions a shift in how health systems in LMICs perceive and engage pharmacies and drug shops—from fragmented retail points to integral nodes in equitable, people-centered primary health care.

Conclusion & Call to Action

Integrating pharmacies and drug shops into primary health care systems offers a practical, high-impact pathway to extend access, improve quality, and build more resilient mixed health systems in low- and middle-income countries. This report has laid out a clear case for action—diagnosing persistent challenges, identifying strategic levers, and outlining country-specific pathways forward. The opportunity is now to translate this vision into reality through bold experimentation, sustained policy engagement, and cross-sectoral collaboration. Endless Health and R4D invite funders, governments, implementers, researchers, and private sector actors to join in advancing this agenda—mobilizing resources, testing innovations, and shaping policy to ensure that these frontline providers are no longer left on the margins of the health system, but instead positioned as essential partners in achieving universal health coverage.

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Annexes

Annex 1: Table of Stakeholders for Key Informant Consultations

The R4D-EN team is grateful to the following colleagues from countries and funding and technical organizations for their insights and contributions during key informant consultations:

Key Informant	Partner Type	Organization
Hong Wang	Funder	Gates Foundation
Team at Society for Family Health, Nigeria	Country implementer	Society for Family Health Nigeria
Alex Ergo	Development partner organization	Population Services International
Prashant Yadav	Expert	INSEAD
Michael Nedelman	Country implementer	Maisha Meds
Jafary Liana	Country implementer	Apotheker
Catherine Goodman	Expert	London School of Hygiene and Tropical Medicine
Jishnu Das	Expert	Georgetown University
Kuyosh Kadirov	Funder	USAID
Mara Hansen Staples	Development partner organization	Salient Advisory
Iyadunni Olubode	Funder	MSD/Merck for Mothers
David Clarke	Multilateral	WHO
Naa Akwetey	Country implementer	mPharma
Farouk Merali	Country implementer	mClinica / SwipeRx
Paul Sinclair	Federations/Assoc	International Pharmaceutical Federation (FIP)
Faisal Mahmud	Country implementer	Health OS
Febriansyah	Government	MOH Indonesia- Center for Health Financing and Decentralization
Asri Ritonga	Government	Indonesia National Health Insurance Agency (BPJSK)

Annex 2: The Roles and Value Proposition of Drug Vendors in LMICs

In the consultations and review of literature for this report, the following critical roles and value propositions offered by drug vendors stand out, illustrated by salient examples

Critical types and examples of value offered by private pharmacies and drug shops

Roles	Value Proposition	Learning Examples
Provide **quality-assured generic drugs, products, and consumables**: • Administering medicines in line with any existing guidelines	• Accessibility • Cost-effective supply chain management • Quality assurance	Maisha Meds and mPharma in supply chain to monitor the quality of products
Carry out **basic screening, counseling, treatment, and referral** services • In-person (first-contact) consultations • Screening and (esp. rapid and digital) diagnostic services • Referral • Possibly, facilitating telemedicine (remote consultation with clinical experts/ providers) • Routine monitoring and management of NCDs	• Expanding Service Delivery and Patient Experience • Alleviating the burden on formal healthcare systems	Matrika's social franchising in India and Doctor-in-tab telemedicine in Bangladesh (mPharma also doing telemedicine and routine NCD monitoring now) Examples from countries that use pharmacies to deliver NCD services
Support **health promotion and behavior change** campaigning • Education on the drug's efficacy, interaction, and adverse-effects • Patient-centered treatment monitoring, including directly observed therapy for TBCounseling NCD patients • Facilitate assisted self-care (pregnancy tests, BP/blood glucose checks, etc.)	• Community Health Support and Self-Care • Financial and Insurance Integration	SwipeRX provides a centralized education platform for pharmacists HealthOS provides translation services to improve the pharmacists' capacity in educating consumers
Help to strengthen underlying health system functions • Improve data collection • Automated data recording and reporting	• Tracking public health trends and inform interventions • Surveillance and Data Collection	MSD for Mothers-Nigeria collected family planning and malaria

• Smart algorithm for case categorization • Health system resilience and responsiveness to changing burden of disease (e.g., NCDs), seasonal outbreaks, pandemic threats, etc.		sales products data from PPMVs[1] HealthOS collects comprehensive data e.g., on anti-bacterial drugs going to pharmacies Extensive work was done in Bangladesh during COVID-19 to use pharmacies for surveillance.

[1] the data is not yet integrated into systems like DHIS2 for broader use in planning or decision-making

Annex 3: Summary of Co-Creation Meeting with Stakeholders on Integration of Private Drug Vendors in Primary Healthcare Systems in Low- and Middle-Income Countries

Wednesday, February 26, 8:00AM-9:30AM EST

Since August 2024, Results for Development (R4D) and the Endless Health have partnered to explore the integration of pharmacies and informal drug sellers into primary healthcare (PHC) systems in low- and middle-income countries (LMICs). The collaboration aims to assess the potential benefits, identify barriers and facilitators, and determine where and how to catalyze action. The partnership focuses on three key objectives: (1) evaluating the role of private drug vendors in improving access to quality PHC services in LMICs, (2) reviewing promising innovations and emerging opportunities for integrating drug vendors at the PHC level within local health systems, and (3) identifying priority interventions that the global health community can leverage to integrate these providers in support of public health objectives, building on lessons learned from previous programs (See Annex). This meeting brought together 36 participants, including key funders (Gates Foundation, Merck), implementers (mPharma, Apotheker, Maisha Meds), technical assistance providers (PSI), and country officials from Kenya, Tanzania and Nigeria to share insights, gather feedback and co-create priorities and action steps to include in a final program report by mid-March 2025.

Meeting objectives:

- Revisit the role/impact of private pharmacies and drug shops as critical providers of primary healthcare (PHC) services in low- and middle-income countries (LMICs)
- Examine the current landscape of private pharmacies and drug shops within local/community health systems
- Identify and prioritize critical actions by the global health community to support greater engagement and integration of drug vendors into PHC systems

Key takeaways:

Welcome remarks

- R4D opened the discussion by emphasizing the need to more effectively integrate private pharmacies and drug shops into PHC systems, particularly considering reduced global funding from USAID and the UK. Endless Health underscored the importance of understanding the patient's perspective and recognizing local drug shops—often overlooked—as trusted healthcare providers. The meeting aimed to explore strategies for better incorporating and utilizing these providers within the formal healthcare system.

Key findings and insights

- **Diverse provider types:** Providers range from formal pharmacies with trained staff to drug shops with basic training for uncredentialed individuals.

- **Existing initiatives:** Several initiatives engage private drug shops and pharmacies, including those that develop formal provider cadres [e.g. accredited drug dispensing outlets (ADDOs) in Tanzania and patent and proprietary medicine vendors (PPMVs) in Nigeria], social franchising (e.g. PSI and PSI Reproductive Choices) and social marketing (e.g. USG-supported total market approach / healthy markets initiatives) service- and product-specific projects (e.g., donor-funded and focused on HIV, malaria, MCH), supply chain innovations for bulk procurement and inventory management enhance efficiency for private providers (Maisha Meds, mPharma, HealthOS) and digital health innovations for remote service delivery, provider support, and self-care (mPharma).
- **Health system challenges:** Despite successful examples, private providers remain poorly integrated into primary healthcare systems, facing barriers in:
    - *Leadership and governance*-Economic pressures that drive non-compliance, regulatory apathy, and structural limitations.
    - *Health financing*- Misaligned financial incentives, lack of access to capital, and reimbursement challenges
    - *Health workforce*- Challenges with licensing and staff qualifications.
    - *Service delivery*- Lack of PHC service delivery model for drug shops and standard guidelines on roles
    - *Operational*-Poor data reporting due to administrative burden on drug vendors, weak links to quality-assured supply chains, and poor coordination with the public healthcare system.

Overarching messages to enhance engagement and integration

1. **Evidence to policy loop:** There is limited systematic evidence on integrating private drug vendors, with most data isolated in specific projects. In Nigeria, a Merck and Gates-funded project with Society for Family Health to support PPMVs providing family planning (FP) services improved access and quality, resulting in an updated task-shifting policy. However, even as training and engagement of PPMVs under the Pharmacy Council of Nigeria (PCN) has been scaled up, integration of routine PPMV data into public systems to support monitoring and planning—and eventually financing—of services through PPMVs is still needed. In Tanzania, pilot ADDO programs led to the nationwide integration of drug shops into PHC services, improving access to essential medicines, but challenges remain in feeding systematic evidence into monitoring, regulation, and financing.
2. **Role of local champions:** Well-positioned local actors are key to sustaining private provider engagement and driving policy change—for example, community health workers facilitating referrals, screening, and integrating digital systems to streamline processes (e.g. Apotheker's Afya-Tek in Tanzania), health cadres at community hubs in Indonesia, organizations like PCN driving engagement of PPMVs in Nigeria, and private sector partners that provide financial tools, advanced digital platforms for data management, and inventory management systems to pharmacies (PharmAccess and Maisha Meds).

3. **Leveraging networks to scale interventions:** Fragmentation of private drug vendors hinders scaling, but networks like pharmacy chains and social franchises, supported by technology, enable cost-effective scaling, training, and monitoring of health interventions.
4. **Innovative cross-sectoral partnerships:**
    - Local governments in Tanzania use an Open Smart Register Platform to integrate private primary care vendors (e.g. Apotheker).
    - In Kenya, private drug vendors serve as pickup points for products (MyDawa).
    - In Nigeria (Salient Advisory) and Indonesia (PROLANIS), drug vendors onboard patients for chronic disease management and health insurance schemes.
    - Technology vendors (e.g. PharmAccess, Maisha Meds, SwipeRX) provide electronic prescriptions and customer-facing tools to private pharmacies and drug shops to streamline communication between providers and patients.
5. **Aligning business incentives with public health goals:**
    - Financial incentives for pharmacies, such as Maisha Meds' malaria treatment program in Kenya.
    - Training drug vendors to align business with public health goals such as training PPMVs to provide FP services in Nigeria and vaccination in pharmacies in Australia and the US.
    - Integration into health insurance, like Indonesia's pharmacies providing chronic disease management.
    - Regulations and incentives to combat antimicrobial resistance through proper medication use.

Breakout group discussions: Emerging opportunities and interventions for integrating drug vendors into PHC systems

In breakout groups, participants engaged in discussions about emerging opportunities and strategies for integrating drug vendors into PHC systems. These conversations were organized around three key themes: elements of global practice-building for integration, country-level interventions for LMICs and innovative use of enabling technologies. During these discussions, the groups prioritized two key areas within each theme for the global health community to take up moving forward.

Elements of global practice-building for integration

- **Global advocacy:** There is a need for increased global advocacy, especially from organizations like WHO, to highlight the role of drug shops. Examples from ADDOs in Tanzania and WHO's new private sector engagement and maturity model can help in this effort.
- **Political economy:** Resistance to involving drug vendors in services is changing. For example, PSI supports pharmacy-based immunizations in Kenya, Nigeria, and Ethiopia. Governments are more willing to integrate pharmacies post-COVID-19.
- **Multisectoral partnerships:** Collaborations with the private sector, particularly the pharmaceutical industry, are key to supporting pharmacies in the current funding landscape.

- **Enabling ecosystem:** Pharmacies must be recognized as healthcare providers within financial systems to foster collaboration and resource support. They should also be categorized based on the services they offer, not just products. Data from pharmacies should be integrated into national health systems. Strong policies and regulatory frameworks, such as task-shifting and task-sharing, are necessary to create an environment for pharmacies to thrive. Regulations must recognize drug outlets within PHC systems, distinguishing between supply systems and PHC.
- **Priority interventions:**
    1. Achieve global recognition, clear definitions, and proper categorization of drug outlets based on their services and regulations, ensuring their effective integration into the PHC system.
    2. Advocate for the inclusion of self-care products in pharmacies, with appropriate linkages to the broader PHC system, to better meet the health needs of local communities.

Country-level interventions for LMICs

- **Pharmacy engagement**: Pharmacies are profit-driven, making it difficult to involve them in broader health services without aligned incentives, especially for conditions like HIV or hypertension. Informal vendors are motivated by reputation and community goodwill.
- **Context-specific approaches**: Solutions must be tailored to each country's context, considering local providers, incentives, and health goals.
- **Non-financial incentives**: Informal vendors are motivated by reputation, while formal pharmacies may benefit from services like telemedicine to increase foot traffic and sales. Human resources and community trust also serve as important motivators.
- **Government and vendor partnerships**: Examples like Ghana's "Networks of Practice" show potential for integrating private pharmacies into public health systems.
- **Tailored health service models**: Custom health packages with financial and data-sharing incentives are key to engaging drug vendors.
- **Political economy of reform**: Transitioning from donor funding to a market-driven model is essential, overcoming formal sector opposition to drug vendor integration. PHC focuses on wellness, prevention, and trust, offering a key entry point for preventive health services.
- **Priority interventions:**
    1. Shape the political economy of reform to facilitate integration of drug vendors, overcoming formal sector opposition and lobbies
    2. Design specific health service packages for drug vendor channels, leveraging both financial and non-financial incentives.

Innovative use of enabling technologies

- **Customization**: Digital health innovations and solutions need to align with national strategies and must be adapted to each country's unique challenges, such as availability of

capital, regulatory ecosystems, and third-party financing or providers' ability to pay for digital services.

- **Successful models**: Examples like the SwipeRX platform that connects small pharmacies via e-learning, provider integration, and community building. In Indonesia, it offers group purchasing, financing, credit management, and logistics. Importantly, less than 2% of funding comes from donors and the public sector; it relies on business revenues and pharma companies.
- **Challenges in different settings**: Differences in provider types (e.g., mobile providers in Nigeria and Ghana) require flexible digital health solutions, especially for training and data collection. In Nigeria, digitized training is available, but challenges exist in delivering, assessing, and certifying it, and sustainability is a concern without donor funding. PCN struggles with staff shortages to scale interventions vis-à-vis providers.
- **Local capacity and knowledge sharing**: Building local capacity and fostering cross-country knowledge exchange is crucial for success.
- **Data integration:** Integrating data from mobile, atomized providers into public systems is complex. Starting with fixed-location providers may be a practical first step.
- **Priority interventions:**
    1. Ensure a clear understanding of who the providers are, their qualifications, and their ability to engage with digital tools before implementing advanced digital health interventions
    2. Adopt a nuanced strategy that considers local challenges and provider characteristics to effectively implement these digital health interventions.

Action areas:

- **Collaborative learning and sharing practical lessons** and models across countries is essential for effective implementation.
- **Generating the will to engage i**s crucial, both from governments, healthcare providers, and drug vendors. Mapping providers and entry points is a good starting point for understanding the context and integrating them into regulatory and financing systems.
- **Addressing the atomization of drug vendors** is key**.** Digital technologies can help bring them together, increase visibility, and reduce transaction costs, enabling better data sharing and collaboration.
- **Both private and public financing must be aligned with the business models** of drug vendors for sustainability and equity. Financial and non-financial incentives should be considered to ensure successful engagement.

Next steps:

- R4D-Endless team to incorporate input from the meeting discussion, a stakeholder survey, and past consultations into a synthesis report on next steps for integrating pharmacies and drug shops into local health systems.
- The team proposed ongoing engagement and follow-up in further bilateral conversations, with a focus on designing and partnering on practical solutions.

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