

## Optimizing private pharmacy channels for decentralized diagnostic access

### **COVID-19 showed rapid diagnostic testing at the community level can be a game-changer**

COVID-19 showed the world that diagnostic tests are the first line of defense in a health emergency, vital to keeping people safe. RT-PCR was the first reliable test available, but it was not only in short supply at the start of the pandemic but also sometimes highly unaffordable and scarcely available for use beyond centralized health settings, in places where people first seek medical attention – in primary care clinics and communities<sup>i,ii</sup>. The need for decentralized access to testing was also made clear by acutely overburdened healthcare systems around the world.

The lesson for decentralizing access to diagnostic tools and services is one that applies to all diseases, after all, testing is the bedrock of sustainable and resilient health systems and critical for the achievement of universal health coverage. Making diagnosis and health management accessible where patients seek care is therefore an important goal. The success of rapid diagnostic tests for COVID-19 (used by health workers and individuals) indicated that testing in the community and self-testing could be a game changer for many diseases. At FIND, we observe that COVID-19 has spurred a wave of diagnostic innovation that has never been seen before; today's innovations are increasingly moving towards point of care (POC) tests that can provide inexpensive results quickly, sometimes in the palm of a hand and in the comfort of a home and away from tests apt for centralized laboratories with large, fixed equipment run by highly trained technicians.

### **Improving community access requires community distribution channels**

These POC solutions, including those meant for use by healthcare workers or individuals as self-tests, are/will be suitable for deployment at the community level. However, conventional distribution channels include centralized laboratories and hospitals in the public and private sector. Outside of these, several “phy-gital” (physical + digital), online or offline B2B and B2C private delivery channels for diagnostic tools and services exist to improve access right till the community level. Direct to consumer retail private pharmacy is a preeminent example of one such delivery channel.

Pharmacies are known to be popular access points for medical services, owing to their widespread physical presence, geographical proximity, large inventory base, convenient and long operating hours, and lack of queues and consultation fees. Globally, their reliance as a first point of contact for care and their contribution to health outcomes is well-acknowledged, underlining their strategic significance in *delivering care where people seek it*<sup>iii,iv,v</sup>. During the pandemic, pharmacies were a potential gateway to increase availability of relatively affordable POC solutions such as professional use tests and self-tests, however, their potential was largely unexplored.

Since 2021, FIND's Market Innovation Unit has engaged with pharmacies to understand their feasibility in providing access to diagnostic tools and services<sup>vi</sup>. Three pharmacy channel project pilots centered around COVID-19 and Diabetes with multiple partners in Kenya, Vietnam, and Cambodia, have generated evidence and learnings to inform not only the potential of pharmacies in providing decentralized access to diagnostic tools but also the *factors that contribute to an efficient and effective model of diagnostic delivery in the pharmacy*. Below is an overview of each pharmacy project pilot, its outcome and learnings that can inform future decentralized access initiatives for rapid diagnostics in the pharmacy channel.

### **A pilot in Kenya to inform the design and implementation of COVID-19 testing programs in retail pharmacies**

In Kenya at the start of 2021, two COVID-19 testing options were available: a private sector PCR test at ~US\$75 per test and a free PCR test in designated public healthcare facilities. Given that pharmacies in Kenya have historically performed rapid diagnostic testing (e.g., malaria, HIV), leveraging these channels, when professional use tests for COVID-19 became available in Kenya, presented a strong private-sector opportunity to augment COVID-19 testing. FIND collaborated with Maisha Meds, KEMRI Wellcome Trust Programme, and the Busara center to explore the potential of private pharmacies for COVID-19 testing. The pilot aimed to assess the feasibility and acceptability of pharmacy-based COVID-19 testing, including pharmacy clients' willingness to pay (WTP), uptake, providers' costs, and experiences.

*Project Outcomes:* Through the pilot only 750 tests, or 65% of the intended target (1,152 tests) number of tests were distributed and 21 pharmacies received training for their staff. As of November 2021, the selling price of the COVID-19 PU AgRDT was reduced from KES 500 to KES 100, on the basis of anecdotal evidence that reportedly suggested Maisha Meds' customers were either unable or unwilling to pay more for a Covid RDT than they did for malaria or HIV RDTs.

### **A pilot to assess the effectiveness, feasibility, and sustainability of utilizing pharmacies as a direct-to-customer retail channel for COVID-19 Self Tests in Vietnam**

In partnership with SwipeRx, FIND embarked on a pilot project to assess the effectiveness, feasibility, and sustainability of utilizing the pharmacy as a direct-to-customer retail channel for improving access to QA diagnostic products, in this case specifically COVID-19 Ag-RDTs for self-use. This pilot encompassed two rounds of “market activations” conducted in three provinces across Vietnam, namely HCMC, Ha Noi, and Quang Binh, spanning 4 weeks each, from October 2022 to May 2023. Market activation activities included: digital awareness campaigns, placement of in-pharmacy material to generate awareness and demand, and training of pharmacy professionals who did not previously stock QA self-use COVID-19 Ag-RDTs. Together with market activation activities, the FIND and SwipeRx teams successfully negotiated the prices of two QA COVID-19 Ag-RDTs for self-use identified in the market, i.e., Flowflex Self-Test and Humasis Self-Test, for SwipeRx network pharmacies..

*Project Outcomes:* The price of Flowflex and Humasis self-tests were reduced by up to 60% through negotiations with local distributors. By the end of June 2023, 341 Swipe-Rx pharmacies stocked 17,115 QA COVID-19 Ag-RDTs for self-use. In total, 339 pharmacists received training to promote the correct stocking behaviour, sale and usage of COVID-19 Ag-RDTs for self-use.

## A pilot to improve diabetes and blood glucose monitoring knowledge and practices among pharmacy professionals in Cambodia and Viet Nam

In 2021, FIND and SwipeRx collaborated to enhance the knowledge of diabetes and blood glucose monitoring (BGM) among pharmacy professionals in Cambodia and Vietnam<sup>vii</sup>. The initial phase involved conducting a digital survey which unveiled a lack of awareness concerning diabetes management practices within the pharmacy channel of these two countries, despite pharmacies being crucial sources of health advice for underserved communities. To address this knowledge gap, an accredited continuing professional development (CPD) module was launched subsequently on the SwipeRx application for pharmacy professionals and students in both countries, followed by a knowledge assessment for the ones received the training.

*Project Outcomes:* Of 1,137 and 399 pharmacy professionals/students who completed the module and passed the assessment in Cambodia and Viet Nam, 1,124 (99%) and 376 (94%) received accreditation. Knowledge levels improved substantially in 10 of 14 learning areas in Cambodia and 6 of

10 in Viet Nam. Whereas 33% of survey respondents in Cambodia (N=386) and 63% in Viet Nam (N=375) reported performing blood glucose testing at the pharmacy, only 19% and 14% were aware that clients taking multiple daily doses of insulin should check blood glucose levels several times a day.

### Key Learnings For Optimizing Private Pharmacy Channels

While country contexts and individual pharmacist behavior is important, overall, the pilot projects conducted by FIND and its partners have yielded insights that can impact future initiatives in the pharmacy channel. The demand for COVID-19 diagnostic testing increased rapidly and decreased during the pandemic, however, these lessons, from real-world scenarios, illuminate the complexities and nuances of pricing, stocking behavior, product selection, awareness and education, and partner selection within the realm of pharmacy engagement.

#### 1. Pricing and Stocking Behaviour

The projects unveiled that the impact of price reductions on stocking behavior can be project-specific. While the Kenyan pilot demonstrated that an 80% price reduction did not guarantee sustained sales growth, the Vietnamese Covid-19 pilot highlighted the potency of a substantial price reduction in influencing pharmacy stocking choices. In Vietnam's Covid-19 pilot, a larger price reduction of Flowflex self-tests lead to an increasing trend of Flowflex stocking over Humasis, indicating the effect of price on pharmacy's stocking behavior. Price was also identified by pharmacies and pharmacy clients in Vietnam as a key factor deciding their stocking and purchasing behavior, alongside test quality and MOH endorsement. Pricing discounts, product donation, credit terms and other incentives such as free product promotions or gifts were identified as potential drivers to encourage Ag-RDT stocking practices, as indicated by the Vietnam pilot's endline survey.

#### 2. Product Selection and Customer Preferences

The learnings from the Kenyan pilot emphasized that reduction of prices alone may not impact overall demand; solutions should harmonize with the unique needs of frequenting customers. Customer preferences should guide product selection, as evidenced by feedback from Busara's surveys, which highlighted the aversion to nasopharyngeal swabs. This underscores the importance of aligning product offerings with customer expectations for optimal results.

### **3. Product Selection and Pharmacy Willingness to test on-site**

The projects unveiled the diverse factors influencing pharmacy participation in Covid-19 testing. In Kenya, where pharmacists were required to test clients, pharmacy attendants feared that testing clients could increase their exposure to COVID-19 infection and potentially turn away other customers. Some pharmacists were concerned about having inadequate space as they believed they needed a huge space to set up a “lab” for conducting the tests. These concerns made it difficult to recruit pharmacies and led some to discontinue COVID-19 testing after the pilot had launched. However, in Vietnam, where the pilot only required pharmacists to purchase COVID-19 self-tests and not perform test on clients, pharmacy participation was achieved in large numbers, without any trepidation. Therefore, stocking behaviour for rapid tests is not only influenced by the risk of infection, if the test needs to be administered, but also perceived infrastructure requirements.

### **4. Diagnostic Technical Awareness and Stocking Behaviour**

In Vietnam, a significant discrepancy between the perceptions of pharmacy professionals and public healthcare experts regarding the concept of a "self-test" emerged. Before the pilot's launch, pharmacist insights gathered to inform our work by SwipeRx revealed that pharmacy professionals categorized "professional use" tests as "self-tests". While the market was dominated by the availability of nasopharyngeal COVID-19 Ag-RDTs meant for use by healthcare professionals, market research indicated that these professional use tests were being routinely sold to individual customers for self-use, leading to their classification as "self-tests." Reports indicated re-packaging of professional use tests for individual customers in loose plastic pouches.

This observation underscores the need for interventions in the pharmacy channel to be aligned with the local parlance and observed use of diagnostic products. To influence self-test stocking practices of pharmacies and ensure the correct use of professional use tests, it was important to cater to the nuances of how diagnostic products are perceived, communicated, and used in the community. Addressing this gap in terminological understanding, required tailored training and educational programs, as seen by the positive impact of post-pilot training efforts on pharmacy capacity and learning outcomes. This experience exemplifies the importance of coherent communication and education within the pharmacy ecosystem, ensuring that interventions resonate with both professionals and the public for optimal impact.

## **5. Capacity Building through CPD Modules**

The diabetes education focused pilot in Cambodia showcased the power of Continuing Professional Development (CPD) modules. These modules not only enhanced diabetes knowledge among pharmacy professionals but did so in a relatively short span, empowering professionals at scale. Furthermore, the survey results identified gaps in pharmacy professionals' knowledge of and practices related to diabetes despite many reporting receiving some diabetes education in the past three years. This can possibly be attributed to the fact that education received prior to the SwipeRx CPD was provided by pharmaceutical companies and may have been focused on specific products or therapies, rather than general disease awareness and monitoring which is important as people living with diabetes often approach their pharmacy for information on a range of topics related to diabetes, as shown by our survey. Therefore, CPD modules can play a critical role vis-à-vis pharmaceutical trainings in comprehensive capacity building of pharmacy professionals in Southeast Asia to ensure that they are well positioned to recognize potential symptoms of disease and to provide comprehensive and accurate information on self-management practices to benefit their clients.

## **6. Selecting Appropriate Partners**

Choosing the right partner is a critical factor in pilot success. Ensuring alignment between pilot requirements and partner capabilities is essential. Depending on the pilot's goals, various organizations serving pharmacies can be potential partners: pharmacy networks, diagnostic wholesalers/distributors, logistic partners, credit support providers, pharmacy associations, group purchase organizations, and market research agencies. Consider the following checklist when selecting a suitable partner:

- Confirm demand for the product in the partner's network locations, even if widespread.
- If the pilot involves pharmacy-level executive decisions, a partner with ownership or management stake in pharmacies is ideal. Influence on product selection at the pharmacy level is crucial regardless of whether executive decisions are required.
- Robust market research and analytical capabilities of partners to support the pilot are vital for effective decision making.

## **Conclusion**

With the expected emergence of more POC solutions fit for deployment at the community level, the pilot projects conducted by FIND emphasize the potential of private pharmacies as distribution channels for decentralized access to rapid diagnostic tools, and bring forth key lessons that can guide similar access initiatives.

Pricing, product selection, and consumer and pharmacist product awareness emerged as critical success factors. Pricing strategies emerged as a complex factor influencing pharmacy stocking and client behaviour. Price reductions alone didn't always lead to sustained increased sales, highlighting the importance of aligning pricing with customer preferences and needs.

Product selection was also critical, as evidenced by customer preferences and the willingness of pharmacies to stock certain types of products. The importance of awareness and education cannot be understated. Defining common product terminology (i.e. "professional use" vs "self-test") is crucial to foster effective communication and adoption. The success of continuing professional development modules in rapidly upskilling pharmacy professionals emphasizes their evolving role bridging knowledge gaps and providing comprehensive care.

Partner selection is a vital aspect for tapping into the pharmacy channel. Matching partner capabilities with pilot objectives, ensuring influence within pharmacy networks, and possessing strong market research capabilities emerged as key considerations.

While more cross-country and cross-disease pilots and research that tracks the pharmacy market is required, these insights provide a roadmap to leverage pharmacies for improved healthcare accessibility, particularly in low- and middle-income countries.

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<sup>i</sup> Matthews Q, da Silva SJR, Norouzi M, Pena LJ, Pardee K. Adaptive, diverse and de-centralized diagnostics are key to the future of outbreak response. *BMC Biol.* 2020 Oct 28;18(1):153. doi: 10.1186/s12915-020-00891-4. PMID: 33115440; PMCID: PMC7592445.

<sup>ii</sup> At the outset of 2021, COVID-19 PCR testing in Kenya's private sector was available at ~US\$75 per test

<sup>iii</sup> Kapoor SK, Raman AV, Sachdeva KS, et al. How did the TB patients reach dots services in Delhi? A study of patient treatment seeking behavior. *PLoS ONE*2012;7:e42458.doi:10.1371/journal.pone.0042458Google Scholar

<sup>iv</sup> Mistry N, Rangan S, Dholakia Y, et al. Durations and delays in care seeking, diagnosis and treatment initiation in uncomplicated pulmonary tuberculosis patients in Mumbai, India. *Plos One*2016;11:e0152287.doi:10.1371/journal.pone.0152287Google Scholar

<sup>v</sup> Daftary A, Satyanarayana S, Jha N, et alCan community pharmacists improve tuberculosis case finding? A mixed methods intervention study in India*BMJ Global Health* 2019;4:e001417.

<sup>vi</sup> The Market Innovation Unit at FIND leads efforts to ensure the affordability and availability of diagnostics from product introduction to product scale up in the public and private sector. Our focus is on decentralizing access to new POC diagnostics via the private distribution channels (offline/online/phygital) by implementing tailored market interventions with private sector stakeholders across the continuum. To know more about us, please visit us at <https://www.finddx.org/what-we-do/cross-cutting-workstreams/market-innovations/>

<sup>vii</sup> Haldane C, Neukom J, Lailo JM, Hero K, Vetter B. Diabetes and blood glucose monitoring knowledge and practices among pharmacy professionals in Cambodia and Viet Nam: digital survey and education. *BMC Med Educ.* 2023 Jun 29;23(1):483. doi: 10.1186/s12909-023-04449-0. PMID: 37386440; PMCID: PMC10308732. Link: [s12909-023-04449-0.pdf](https://doi.org/10.1186/s12909-023-04449-0) ([springer.com](https://www.springer.com))