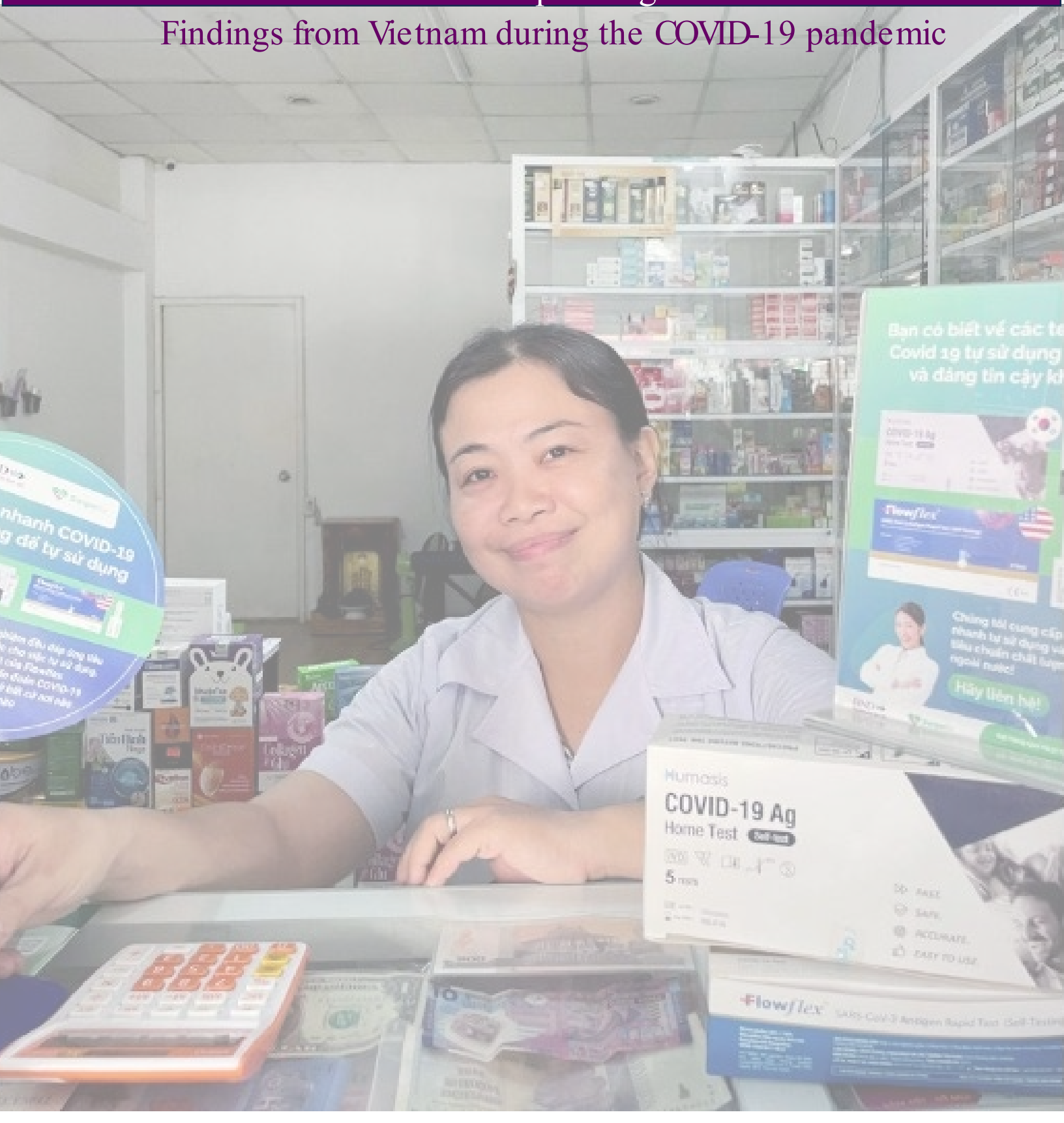
Leveraging Pharmacies to Enhance Equitable Access to Point of Care Rapid Diagnostic Tests:

Findings from Vietnam during the COVID-19 pandemic



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INTRODUCTION

The COVID-19 pandemic strongly highlighted the importance of decentralizing access to diagnostics within health systems. Around the world, conventional providers of diagnostics and healthcare, hospitals, laboratories and clinics, were overburdened to deliver timely access to diagnostics and treatment. With infections rising in the early months, there was a new wave of support to decentralize access to COVID-19 diagnostics through professional point of care solutions or self-administered testing sits within community settings. Decentralizing access to diagnostics has multiple benefits for individuals and the healthcare system; it empowers healthcare seekers with timely information about their health and brings them cost savings, and at the same time decongests an overburdened healthcare system and contributes to a responsive public surveillance health system.

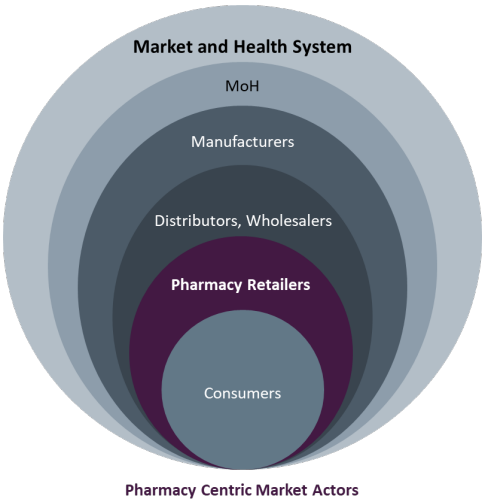
In 2020, with the launch of COVID-19 antigen rapid diagnostic tests (C-19 Ag-RDTs) for self-use, commonly referred to as C-19 self-tests, decentralization of COVID-19 diagnostics and deceleration of the spread of infection could become a reality[i]. However, in Vietnam, as in many low- and middle-income countries, access to such quality-assured self-tests for COVID-19 was limited during the pandemic. With hospitals and doctors acutely overburdened, one way to deliver access to self-tests in community settings was to deploy rapid diagnostic point of care solutions in alternative distribution channels such as local retail pharmacies.

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. In Vietnam, where there are more than 60,000 pharmacy outlets, their reliance as the first point of care is extremely high - 80 percent of individuals in Vietnam buy drugs from private pharmacies and self-medicate[ii,iii]. 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*[iv,v,vi].

Pharmacies as a viable channel for testing

With limited endorsement for community pharmacies as a feasible distribution channel for point of care diagnostics beyond pregnancy kits, glucometers or HIV self-tests[vii], establishing their viability for providing a variety of point of care diagnostic solutions at scale is required. In 2022, FIND as part of its endeavor to explore the viability of creating equitable diagnostic access via private sector distribution channels, worked closely with pharmacies and associated pharmacy market stakeholders in Vietnam, where pharmacies were permitted to buy and sell C-19 self-tests[viii]. FIND worked closely with Swipe-Rx, and multiple stakeholders to understand the pharmacy market context, and the feasibility and effectiveness of taking C-19 Ag-RDTs to the shelves of community pharmacies in Vietnam.

UNDERSTANDING THE PHARMACY LANDSCAPE



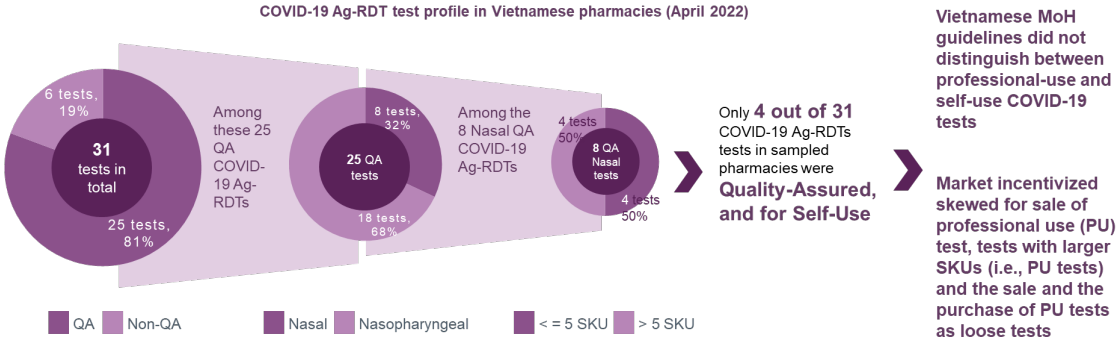
Pharmacy Centric Market Actors

To comprehensively understand the role of pharmacies in the distribution of COVID-19 self-tests, FIND conducted an in-depth analysis of the pharmacy ecosystem in Vietnam. This involved assessing the Ministry of Health's policies, engaging with manufacturers, distributors, and wholesalers, surveying 240 pharmacies and conducting a consumer-based survey among 414 customers. To understand the market context from the lens of pharmacists, FIND partnered with SwipeRx, a technology company with a vast digital network of pharmacy professionals in Southeast Asia, to conduct field-surveys.

Each of these sources of information contributed unique insights into the barriers and opportunities related to the distribution of COVID-19 self-tests through pharmacies.

KEY PHARMACY MARKET GAP: LIMITED ACCESS TO SELF-TESTS AT PHARMACIES DESPITE HIGH CONSUMER DEMAND

- **High Consumer Demand for Self-Testing**: Market research revealed that individual consumer self-testing is widespread in Vietnam. A significant portion of consumers (69%) preferred self-testing over other methods, such as RT-PCR. Moreover, our consumer analysis suggested that the estimated demand volume for quality assured C-19 Ag-RDTs for self-testing during the pandemic was 45 million[ix].
- **Limited Availability of Quality-Assured Self-Tests**: Despite the high demand for self-tests, only a limited number of quality-assured C-19 Ag-RDTs for self-testing were available in the market. Out of 31 different tests available at SwipeRx pharmacies, only 4 were QA, nasal, and offered in smaller packs (SKUs of 5 or less); i.e., were likely self-tests. These 4 QA self-test brands represented only 15% of all pharmacy sales, amongst the pharmacies included in the survey.



- **Prevalence of Nasopharyngeal Tests**: The majority (61%) of tests available at SwipeRx pharmacies were nasopharyngeal tests, available in packs of 20, 25, or 100, which are typically designed for professional use. Sales for the top 3 brands (and 72% of all sales reported) at these pharmacies were for nasopharyngeal tests manufactured in SKUs with a package count greater than 5 tests per package.
- **Challenges with Repackaging**: Anecdotal reports suggested that pharmacy professionals were repackaging nasopharyngeal professional use tests in loose bags for individual customers

demanding self-tests. This practice raised concerns about the absence of necessary instructions for use (IFUs), compromising the quality and accuracy of the tests. For 97% of the pharmacies surveyed, individual clients were their primary customers for the C-19 self-tests, i.e., likely professional use tests re-packaged as self-tests in lose packs.

UNDERSTANDING BARRIERS TO PHARMACY MARKET ACCESS

Our analysis uncovered that profit motive was the primary driver defining market availability of tests and profit incentives were skewed towards the supply and sale of professional use tests, repackaged as "self tests".

Even though the registration of Ag-RDTs for self-tests was permitted in Vietnam, manufacturers preferred to supply professional use tests. For manufacturers, professional use tests were profitable to supply since they attracted high volume demand from large buyers such as private and public labs and hospitals. Therefore, there was a high prevalence of professional use tests in the market.

For pharmacists, selling professional use tests as self-tests meant more profit. "Breaking down" large packs of professional use tests into individual loose packs of self-tests favoured per unit profit maximization. For e.g., if the per test cost of a 25-pack nasopharyngeal test was 2 USD, selling the test in loose packs of 3 USD each was more profitable than selling a nasal self-test costing 3 USD for 4 USD. A cheaper test is also likely to be preferred by a consumer who has a limited understanding about the implications of using a professional tests instead of a self-use test.

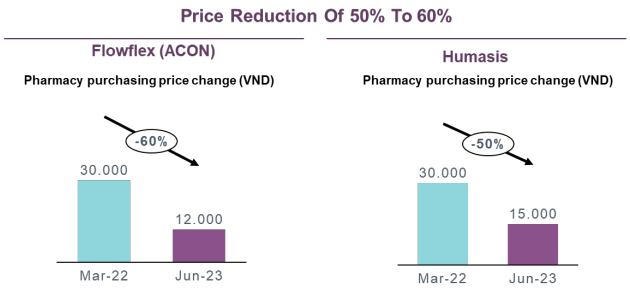
Relatedly in our survey findings, purchase price emerged as the pharmacist's top criteria for stocking any test compared to consumer preference, global/local approvals and origin place of manufacturer. Surprisingly, 80% of pharmacy respondents were aware of the differences between professional use and self-tests, yet price economics and perhaps non-stringent enforcement of regulations incentivized stocking and selling of professional use tests.

Therefore, the motive for profit maximization meant the professional use tests were found abundantly in Vietnam and proved to be a barrier for the stocking of self-use tests. This is also fostered if there is low consumer awareness and demand for quality assured self-tests in correct packaging, however, this was not within the scope of our analysis. Thus, it is pivotal to ensure that self-tests are more economically competitive to stock and that buyers and sellers of a diagnostic test understand the complete implications of using a professional use test vis-à-vis a self-test.

THE ROLE OF MARKET INTERVENTIONS AND INCENTIVES IN DRIVING DIAGNOSTIC ACCESS VIA PHARMACIES

Given pharmacies are a relatively new and unexplored market for point of care diagnostic solutions entering the market, incentivizing the right market behaviour from pharmacists will be imperative in driving their supply to pharmacy shelves. FIND in collaboration with SwipeRx identified key market interventions in response to the market gaps and launched a 10-month market pilot to incentivize pharmacies in SwipeRx's Vietnam network to stock quality assured C-19 self-tests on their shelves. With the objective to test the effectiveness and feasibility of the pharmacy as a direct-to-consumer retail channel for diagnostics, we launched the following market interventions:

- **Promotion of quality assured self-tests:** Digital promotion of 2 commercial suppliers of quality assured C-19 self-tests via the SwipeRx App. Specifically two quality assured tests were identified and vetted by FIND – Acon's Flowflex and Humasis Self-Test. The pharmacies who responded to the digital promotion were engaged with face-to-face sales pushes by the SwipeRx sales representatives and offline customer promotion through the placement of in-pharmacy materials.
- **Competitive Pricing:** Improving the competitiveness of these tests by securing locally negotiated prices and delivery terms for SwipeRx affiliated pharmacies in Vietnam. Specifically, we achieved price reductions of up to 60% were achieved for the two quality assured tests identified, i.e., Flowflex and Humasis, by actively negotiating with local distributors.



- **Capacity Building of Pharmacies:** Building the professional capacity and commitment of pharmacists to use appropriate quality assured self-tests for C-19 via online and offline training

As a result of these interventions in three provinces – HCMC, Ha Noi, and Quang Binh *–17,115 quality assured C-19 Ag-RDTs for self-use were purchased by over 341 SwipeRx affiliated pharmacies.* This was achieved in a challenging market environment characterized by waning market demand for C-19 diagnostic products and decreasing supplier interest to replenish C-19 self-test stocks; proving that if provided with the right market incentives pharmacies are capable of being an effective direct to consumer retail chain for quality assured diagnostics. Our research also indicated that offline and online training had a positive effect on upskilling a pharmacists' knowledge about C-19 self-tests and their confidence to counsel clients.

Finally, through frequent field-surveys conducted during the pilot we learnt that there are several factors that drive the stocking of diagnostics at pharmacies – price, credit terms, quality of the test, government policy and consumer preferences to name a few. Pharmacies highly value product quality, however, quality was not found to be the driving factor for stocking a C-19 self-test – trade price, incentives and credit terms were key determinants, and useful levers for any future market interventions. In the end, pricing in conjunction with face-to-face sales pushes, training, and digital awareness all contributed to higher stocking among the pharmacies.

CREATING THE PHARMACY OF THE FUTURE

In the midst of waning demand, community pharmacies proved to be efficient at stocking and re-stocking C-19 self-tests, as well as having confident and capable providers; illustrating that the role of pharmacies and pharmacists can evolve beyond filling prescriptions. Furthermore, with the COVID led surge in healthcare consumerism and the spur of DIY testing momentum, consumers are comfortable using at-home

diagnostics[x]. Soon, retail and online pharmacies are touted to collectively capture nearly 60% revenue share of the at-home diagnostics market[vii]. Beyond C-19 diagnostics, if provided with the right support and market incentives, pharmacies hold immense potential to become partners in delivering primary diagnostic care.

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[i] https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-first-covid-19-test-self-testing-home

[ii] https://www.kenresearch.com/healthcare/pharmaceuticals/vietnam-pharmacy-retail-market-outlook-to-2025/392370-91.html

[iii] https://www.vietnam-briefing.com/news/vietnams-growing-pharmaceutical-industry.html/

[iv] 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 ONE2012;7:e42458.doi:10.1371/journal.pone.0042458Google Scholar

[v] 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 One2016;11:e0152287.doi:10.1371/journal.pone.0152287Google Scholar

[vi] Daftary A, Satyanarayana S, Jha N, et alCan community pharmacists improve tuberculosis case finding? A mixed methods intervention study in IndiaBMJ Global Health 2019;4:e001417.

[vii] https://www.pharmacytimes.com/view/at-home-hiv-test-kit-now-sold-at-south-african-pharmacies

[viii] Vietnam's pharmacies were permitted to stock and sell medical devices via Conditions of establishments buying and selling medical devices of class B, C, D (Article 37 amending Decree 169/2018/ND) and Decree No. 36/2016/ND-CP dated May 15, 2016, of the Government on the management of medical equipment.

[ix] MIU FIND Conjoint Analysis, Pharmacist and Consumer Insights for Self-Testing Vietnam 2022

[x] https://www2.deloitte.com/us/en/blog/health-care-blog/2021/road-to-diy-consumer-health.html