

# Leveraging Technology to Achieve Gender Equality for Community Pharmacists in Southeast Asia



## Executive Summary

This report examines gendered barriers facing women community pharmacists across Southeast Asia and identifies evidence-based opportunities to use technology to strengthen their professional capacity, leadership, and business viability. Supported by Global Innovation Fund (GIF) Growth and Korea International Cooperation Agency (KOICA), SwipeRx analyzed findings from a rapid literature review, SwipeRx analytics and survey data through a Gender, Disability, and Social Inclusion (GEDSI) framework to identify the following key findings and recommendations:

- **Structural and socio-cultural barriers limit women pharmacists' success.** Women face distinct barriers including limited access to training, financing, and leadership opportunities needed to thrive as healthcare providers and pharmacy operators. Their caregiving responsibilities at home, mobility restrictions, digital literacy challenges and social norms affecting their academic and professional choices translate into reduced opportunities for professional growth and business success. Whereas women represent 80% of the overall pharmacy workforce, they represent only 28% of pharmacy owners.<sup>1</sup>
- **Digital platforms can close gender gaps related to training access and clinical as well as operational capacity in the pharmacy channel.** SwipeRx training data collected in Philippines, Cambodia, and Vietnam demonstrates that women often begin with lower baseline knowledge but achieve substantial learning gains after completing SwipeRx training and post-training quality improvement tools—frequently exceeding levels of knowledge and confidence reported by

male counterparts post-training. 84% of women pharmacists sampled prefer digital training compared to 16% of men, highlighting the importance of digital approaches to overcome distinct mobility and time constraints faced by women.<sup>2</sup>

- **Integrated digital solutions can close gender gaps in pharmacy business viability.** SwipeRx's digital group purchasing organization (GPO) in Indonesia ("Belanja") enables pharmacists of all genders to source quality-assured medicines and other health products for competitive prices from the convenience of their mobile device. For women, this alleviates the need to overcome mobility and other gendered barriers to recommended sourcing and stock management practices. Launched in 2025, the Apotek Inofarma pharmacy network has utilized a suite of integrated digital solutions provided by SwipeRx, including the Belanja GPO, to enable women-led pharmacies to grow. Women-led Inofarma pharmacies stock 3.75 times more stock keeping units (SKUs) compared to the market norm (3,000 vs 800 SKUs) and benefit from 20% lower prices on products procured through Belanja compared to offline suppliers, translating into increased pharmacy earnings.<sup>3</sup>

Looking ahead, several opportunities to further empower women pharmacy operators and leaders emerge from this analysis including a clear need for increased efforts to: i) improve access to digital solutions solving capacity as well as operational challenges; ii) expand access to financing for women seeking to own their own pharmacy; iii) facilitate mentorship and leadership coaching for women pharmacy professionals; and iv) advocate for gender-equitable workplace policies.

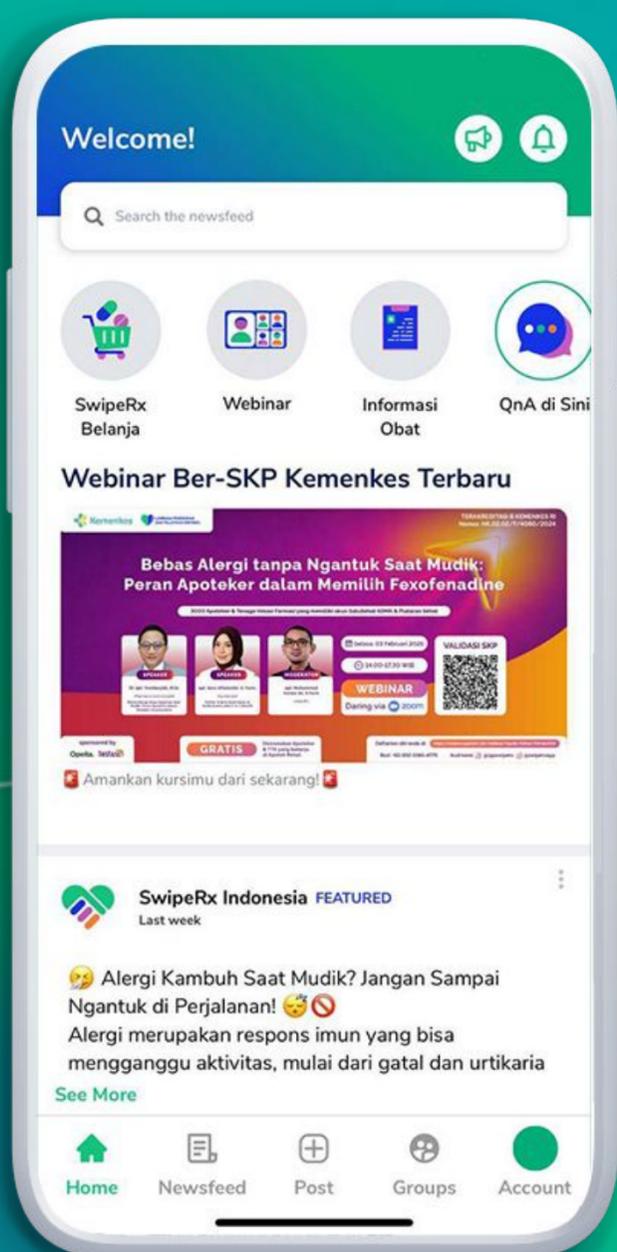
<sup>1</sup>Mayimele, N 2025, 'Women leaders in the strategic positions of pharmaceutical companies: Overcoming barriers and systemic biases', *Business Ethics and Leadership*, vol. 9, no. 1, pp. 65–78.

<sup>2</sup>SwipeRx Pharmacy Bootcamp Study Results, Indonesia, 2023

<sup>3</sup>Inofarma Data

## Background

SwipeRx operates the largest digital network of pharmacy professionals in Southeast Asia, connecting more than 320,000 pharmacists across Indonesia, the Philippines, Vietnam, Thailand, Malaysia, and Cambodia. The platform provides mobile-based professional education, expert guidance, operational tools, and—in Indonesia—product sourcing to improve pharmacy quality of care and business efficiency. SwipeRx users continuously give positive feedback about the perceived benefits of being able to complete professional education courses and source quality assured products for competitive prices from the convenience of a mobile device. Using technology, SwipeRx empowers women and men pharmacists with the training, tools and practical updates they need to serve customers optimally and grow their businesses.



Community pharmacists serve as a critical first point of care across the region, providing essential medicines, health screening, and advice to millions of clients every year. An estimated 80% of community pharmacists across southeast Asia are women, many of whom face gendered barriers within and beyond the pharmacies where they work. Despite their central role in primary healthcare delivery, pharmacists of all genders are often overlooked in national health system strengthening and gender programming due to the highly fragmented nature of the community pharmacy channel, which consists of thousands of independently operated outlets. Women pharmacists face distinct barriers to accessing training, financing, mentorship, and leadership opportunities needed to succeed as business leaders and primary healthcare providers. Caregiving responsibilities, mobility and networking constraints, limited digital access and literacy, and gender bias in financing all restrict women's advancement in the pharmacy channel.

With support from GIF Growth and KOICA, SwipeRx conducted an evidence-based assessment to identify gendered gaps and practical pathways to enhance women pharmacists' ability to lead in the pharmacy channel to improve her economic viability and contributions to community health. The analysis reviewed previously collected SwipeRx platform data, complemented by relevant published studies and secondary literature. Using globally endorsed GEDSI frameworks, SwipeRx analysed available evidence to test and refine three core hypotheses related to:

- 1) Gendered barriers significantly limit women community pharmacists' ability to optimally operate pharmacies and offer quality primary care for customers across Southeast Asia.
- 2) Digital approaches can be used to efficiently enhance women pharmacists' capacity, leadership, and business viability.
- 3) Strengthening supportive policies and organizational culture within pharmacy practice environments enhances women pharmacists' leadership and professional development.

## Gendered Barriers in the Pharmacy Sector: Findings from a Rapid Literature Review

During late 2025, SwipeRx conducted a rapid literature review to identify gender gaps affecting women community pharmacists across Southeast Asia and other low- and middle-income countries (LMICs), with a focus on barriers to pharmacy ownership, sustainable operations, quality-of-care standards, and the delivery of effective client services. The review also examined gender-responsive models—such as digital solutions, training programs, and community pharmacy interventions—that have demonstrated potential to advance gender equity and social inclusion within the health workforce. A targeted search of published literature from 2018–2025 was conducted using databases including PubMed, Scopus, and Google Scholar, complemented by resources from WHO, UN agencies, and regional organizations. Search terms covered community pharmacy practice, gender and GEDSI inequities. Selected studies were systematically assessed and synthesized using a structured thematic approach, combining descriptive analysis with thematic coding to identify recurring barriers, emerging patterns, and promising, scalable interventions.

Despite women comprising the majority of pharmacy professionals globally—including ~80% of the pharmaceutical workforce in southeast Asia—they remain dramatically underrepresented in leadership roles including as retail pharmacy owners. In Southeast Asia, women own an estimated 28%<sup>4</sup> of community pharmacies, signifying entrenched, cyclical barriers that hinder women's ability to own and lead community pharmacies. These patterns reflect broader gender norms beyond the pharmacy sector, as regional evidence shows



that while women operate or manage approximately half of microenterprises across Southeast Asia, they are significantly less likely than men to own small and medium enterprises.<sup>5</sup> Global evidence highlights the fact that many women pharmacists face slower career progression and remuneration inequities despite educational parity, which reduces their capital for pharmacy ownership.<sup>3</sup> Disproportionate caregiving responsibilities and mobility restrictions limit women pharmacists' ability to access training as well as suppliers and tools required to meet pharmacy operational standards. Gender-based norms often channel women into client-facing "pharmacy practitioner career pathways", and away from pharmacy logistics, management, or entrepreneurial tracks. Women's access to continuous professional development, networking opportunities, leadership training, and specialized certification is significantly limited, compared to male counterparts.<sup>2</sup> While digitalization has many benefits for women, such as expanding access to professional training and supply management tools, it also risks widening gendered gaps in contexts where women lack connectivity and/or literacy.

<sup>4</sup> SwipeRx digital survey data, 2022

<sup>5</sup> World Bank. (2023). *Enterprising Women: Toward Equal Business Opportunity in Southeast Asia*. World Bank East Asia and Pacific Gender Innovation Lab (EAPGIL)

The following interconnected, gender-based barriers were identified through a rapid review of 15 peer reviewed publications and globally accessible reports relevant to pharmacy professionals in southeast Asia and similar low-and middle-income (LMIC) contexts:

- **Bias and other limitations on career networking, mentoring and professional education:** Women pharmacists are more likely to experience unconscious gendered bias during their studies and career compared to men. For example, women leaders are judged more harshly than men for identical behaviors, with assertive conduct interpreted as aggression in women but competence in men, reflecting implicit gendered expectations of leadership behavior.<sup>6</sup> In addition, women face barriers to accessing networks with potential to facilitate their leadership including gatherings with industry actors, business forums and after-hours events where procurement and business partnership opportunities are discussed. Women also face limited mentorship and sponsorship opportunities—with senior leaders less likely to actively advocate for women's advancement due to network exclusion—and work-life balance challenges.<sup>1</sup>

Research conducted by SwipeRx among pharmacy professionals in Vietnam and other countries across southeast Asia repeatedly reveals a need for greater access to digital professional reference and training materials, courses and tools to enable women to overcome barriers to participation in formal, offline professional education/trainings and meet quality

standards.<sup>7</sup> Women pharmacists surveyed by SwipeRx reported 1) critical knowledge and skill gaps in key areas of primary care; and 2) lack of reliable and professional online resources to complement their formal training, including digital reference tools focused on aged care, chronic disease management, updated treatment guidelines, and drug-interaction checks.<sup>8</sup>

- **Pay inequality and financial exclusion:** Multiple global reviews document gender-based pay disparities, with women pharmacy professionals facing slower career advancement and inequities in remuneration, job opportunities, and role assignments despite educational parity.<sup>2, 9</sup> Lower lifetime earnings reduce women's capacity to accumulate capital for pharmacy ownership, creating cyclical entrepreneurship barriers.<sup>3</sup> Access to capital is a critical hurdle. A recent review documented evidence of financial exclusion patterns, with cultural, religious, and social factors—including patriarchal norms and family expectations—constraining women's financing and networks in Asia Pacific.<sup>10</sup> Lacking access to formal credit, women may be more likely to operate unregistered, small-scale stores driven by necessity, instead of registered pharmacy ownership. Reliance on family networks limits ownership opportunities when resources fall short relative to needs for licensing, structure and inventory. Participative, relational management styles—balancing business, family, and community—further constrain women's ability to thrive as pharmacy owners or operators, as a result of the need to meet obligations at home as well as at the pharmacy.

<sup>6</sup> Ayinla, BS, Asuzu, FA, Ndubuisi, NL., Ike, CU, Atadoga, A, Adeleye, RA, 2024. Utilizing data analytics for fraud detection in accounting: A review and case studies. *International Journal of Science and Research Archive*, 11(1), pp.1348-1363.

<sup>7</sup> Testing Gender-Responsive Solutions for Aged-Care Through Technology-Equipped Community Pharmacists in Vietnam, SwipeRx, Vietnam, 2025

<sup>8</sup> Ibid.

<sup>9</sup> International Pharmaceutical Federation (FIP) (2025). *Empowering women: Advancing female entrepreneurship in community pharmacy. Executive summary*. The Hague: International Pharmaceutical Federation.

<sup>10</sup> Franzke, S., Wu, J., Froese, F.J., Chan, Z.X. (2022) Female entrepreneurship in Asia: a critical review and future directions. *Asian business & management*. 21(3), 343-372.

- **Caregiving responsibilities:** Disproportionate caregiving responsibilities relative to men, emerge as a consistent barrier to women pharmacists' professional advancement globally.<sup>1,2,11</sup> Women bear primary responsibility for childcare, eldercare, and household management in addition to pharmacy duties. These multiple responsibilities within and beyond the pharmacy constrain their ability to engage in professional development and operational practices required to excel in the retail pharmacy channel.
- **Mobility constraints:** Cultural norms and safety concerns significantly restrict women's mobility relative to men's in several LMIC contexts, limiting employment opportunities and workplace choices. For example, evidence from the Democratic Republic of Congo and Malawi shows that women working in pharmacy supply chain and other pharmacy-related roles face distinct barriers to work-related travel, as motorcycles are often the only available mode of transport to reach rural facilities, yet are considered unsafe or socially unacceptable for women, particularly during the rainy season or when overnight stays at health facilities are required.<sup>11</sup> These constraints reduce women's ability to accept rural postings, attend trainings, or undertake supervisory roles, thereby limiting professional and business growth opportunities.<sup>12</sup>
- **Career segregation:** Gendered segregation within the pharmacy workforce manifests through educational channeling and career preference patterns. In Vietnam, gendered norms steer female pharmacy students away from certain specializations by discouraging STEM-related studies and courses related to specific types of pharmacy work categorized as "men's work" i.e. jobs in warehouses and other aspects of the pharmacy supply chain.<sup>5, 13</sup> As a result, women are more likely than men to follow a 'practitioner –client-facing—career pathway in the pharmacy'—and miss opportunities for specialized supply management education and training required to optimally operate and own a pharmacy. This early career segregation has long-term implications as it reduces the pipeline of women prepared for pharmacy ownership.
- **Digital barriers and reliance:** While digitalization offers many benefits to women, including opportunities to overcome gendered barriers to professional education and supply management tools, it risks exacerbating gender inequalities in low and middle-income country contexts where women lack internet access and/or digital literacy needed to benefit optimally.<sup>14</sup> Where women have lower smartphone ownership, limited rural connectivity, lower digital literacy, and/or face cultural barriers to technology adoption, they are less likely to be able to benefit fully from digital innovation. In contexts where women can take advantage of digital platforms relevant to their professional advancement, as mentioned earlier in the report, technology can address gendered barriers. SwipeRx research among pharmacy professionals in Cambodia revealed that 73% of women preferred online training compared to 67% of male pharmacists.<sup>15</sup>

<sup>11</sup> Alshahrani, A. (2025) Gender equality in education and community pharmacy practice in the Middle East: A systematic review of literature. *Medicine*. 104(6), e41475.

<sup>12</sup> Village Reach. (2024) *Understanding Gender Imbalance in the Public Health Supply Chain Workforce Report: Research Findings and Recommendations*. Village Reach.

<sup>13</sup> Phan, Q.N., Nguyen, O.T.K., Tran, H.T., Dang, N.B., Tran, N.H. (2025) Socioeconomic determinants of career intention in pharmacy students in Vietnam. *Pharmacy (Basel, Switzerland)*. 13(6), 161.

<sup>14</sup> Khan, S., Eab-Aggrey, N. (2025) A double-edged sword?: Digitalization, health disparities, and the paradoxical case of e-pharmacy in Ghana. *Digital health*. 11, 20552076251326224.

<sup>15</sup> Enhancing Cambodia's Social Health Protection with Insights from Pharmacy Practices related to Hypertension and Diabetes, World Bank, 2025

## How SwipeRx Closes Gender Gaps in the Pharmacy Channel: Insights from SwipeRx Analytics & Survey Data

As part of the analysis, SwipeRx reviewed and analyzed its platform analytics, 12 survey reports conducted between 2018 and 2025,

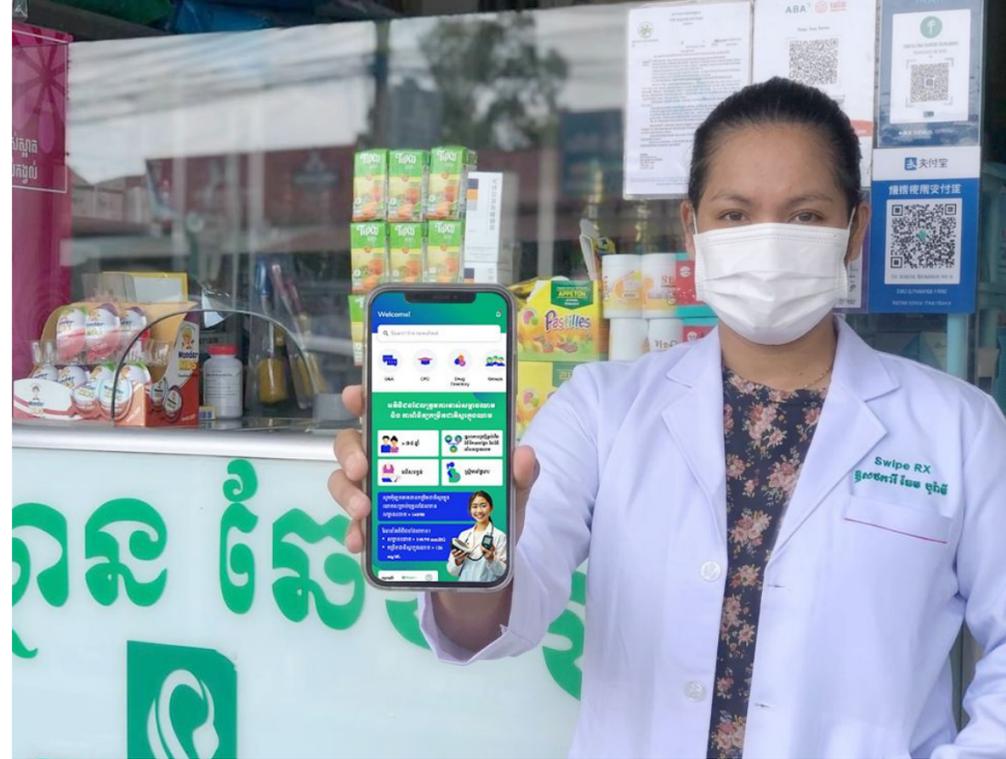
and interview data from five projects to identify key trends and insights. The following analysis presents gender-disaggregated quantitative and qualitative findings, highlighting the gaps and barriers that limit women pharmacists' ownership, influence, leadership opportunities, and access to critical resources, as well as the ways SwipeRx addresses these challenges through its platform.

Key Gendered Barriers	How SwipeRx Addresses This
<p><b>Training Access &amp; Capacity Gaps</b> Women pharmacists face persistent gaps in clinical and operational knowledge, access to accredited training opportunities due to caregiving responsibilities, mobility constraints, and reliance on offline, time-intensive processes.</p>	<p>SwipeRx delivers mobile-based, accredited digital training and post-training quality improvement tools that enable flexible, self-paced learning to close gaps in knowledge and confidence to offer quality care at the pharmacy. baseline knowledge gaps.</p>
<p><b>Supply Chain and Financing Access</b> Women pharmacists experience distinct barriers to navigating an inefficient pharmacy supply chain and access to capital needed for pharmacy business success.</p>	<p>Using integrated digital solutions including Belanja group purchasing, SwipeRx improves the visibility and reliability of pharmacy operations and supplier terms for pharmacy leaders. Through the Inofarma franchise network, SwipeRx reduces start-up costs and operational risks to set women pharmacists' up for business success. By reducing time and effort needed to adhere to operational best practices, and by reducing financial risks associated with pharmacy ownership, SwipeRx enables women to overcome gendered barriers to business success.</p>
<p><b>Limited Networks and Leadership Pathways</b> Women pharmacists have limited access to professional networks, mentors, and leadership pathways, particularly outside urban centers, reinforcing under-representation in senior, ownership, and decision-making roles.</p>	<p>SwipeRx's digital platform connects women pharmacists to peer networks, professional communities, and leadership-oriented learning content. This ecosystem supports knowledge exchange, confidence-building, and progression into leadership and ownership roles within the pharmacy sector. In addition, SwipeRx-sponsored digital and hybrid round tables and conferences create additional networking and mentoring opportunities.</p>
<p><b>Gender norms and caregiving expectations</b> disproportionately affect women pharmacists' career progression, with limited institutional advocacy for flexible work arrangements, professional recognition, and equitable leadership opportunities.</p>	<p>By generating data on women's participation, performance, and business outcomes, SwipeRx provides evidence to support future advocacy for gender-equitable workplace and sectoral policies. Its platform elevates women pharmacists' visibility and reinforces their role as viable business owners and healthcare leaders.</p>

## Using Technology to Address Gendered Gaps in Clinical Knowledge

Between January 2022 and December 2025, SwipeRx made 244 digital training courses accessible to pharmacy professionals and issued 248,753 certificates for completed digital training courses through partnerships with pharmacy professional associations, pharmaceutical companies, and global health partners. The number of training modules offered annually through SwipeRx also increased substantially from 59 in 2022 to 79 in 2025. During the same time period, the number of professional education certificates offered through the platform increased from 66,306 to 74,666.

### Digital Education Growth (2022 vs 2025)



A study conducted in Indonesia in 2023,<sup>16</sup> found that 84% of female pharmacists surveyed preferred online training, compared to only 16% of male pharmacists. This marked preference highlights the distinct barriers women face in attending offline training, including limitations in mobility both outside the home and between pharmacies, which can restrict access to professional development opportunities. More than 70% of SwipeRx platform users are women pharmacists.

Learning outcomes have been positive for SwipeRx app users of all genders, with disproportionate improvements reported by women. Based on a review of multiple accredited professional education courses offered through SwipeRx, 86% of both women and men pharmacy professionals achieved passing post-SwipeRx training scores, indicating equitable overall training effectiveness. As described in the case studies below, women often begin with lower baseline knowledge levels before demonstrating greater gains in knowledge and clinical capacity after SwipeRx training.<sup>17</sup> The following case studies describe resulting changes in clinical knowledge and confidence among SwipeRx-trained pharmacy professionals by gender in three different country settings, reflecting the regional potential of SwipeRx digital training and post-training tools to address gendered gaps in clinical capacity among pharmacy professionals.

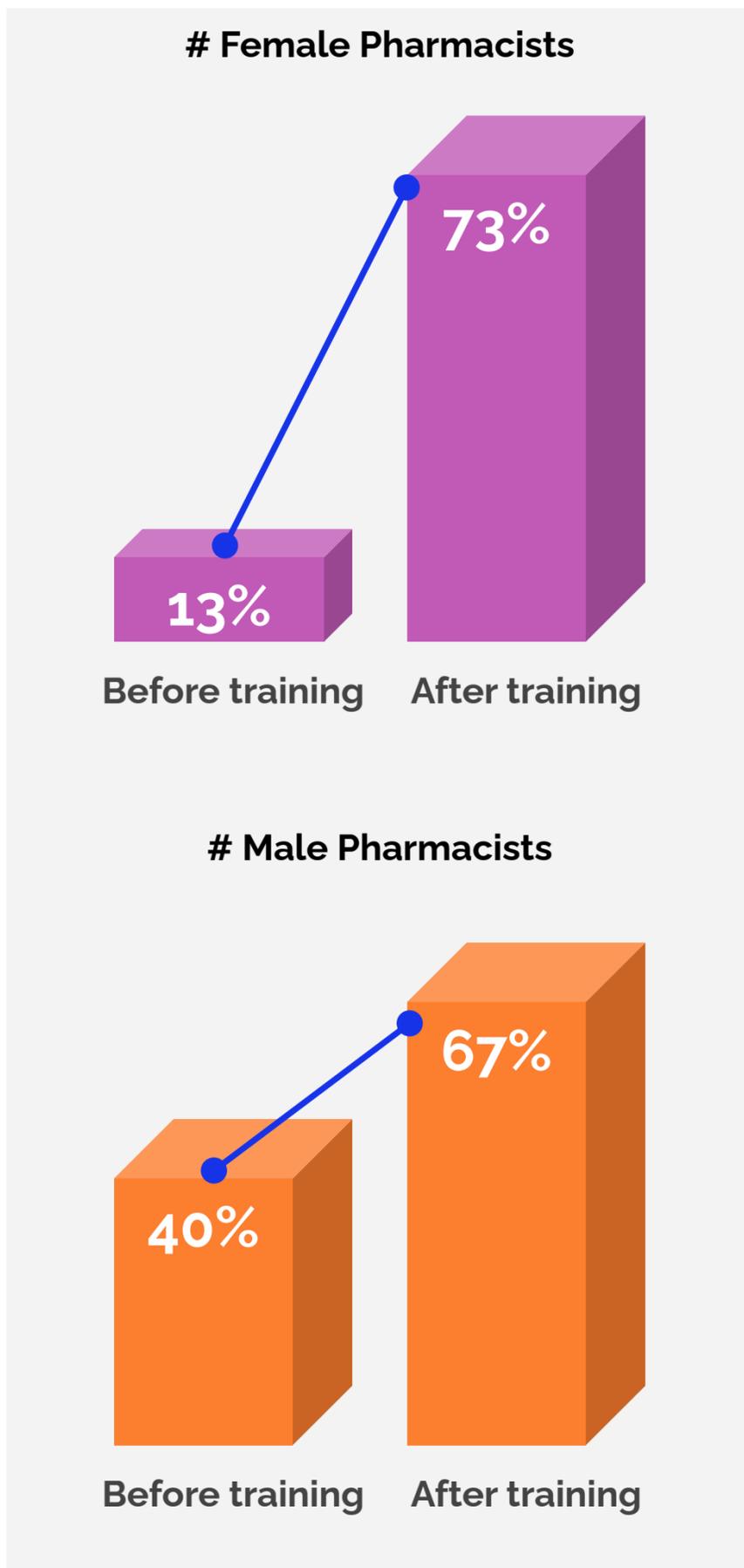
<sup>16</sup> SwipeRx Pharmacy Bootcamp Study Results, Indonesia, 2023

<sup>17</sup> SwipeRx impact metrics data

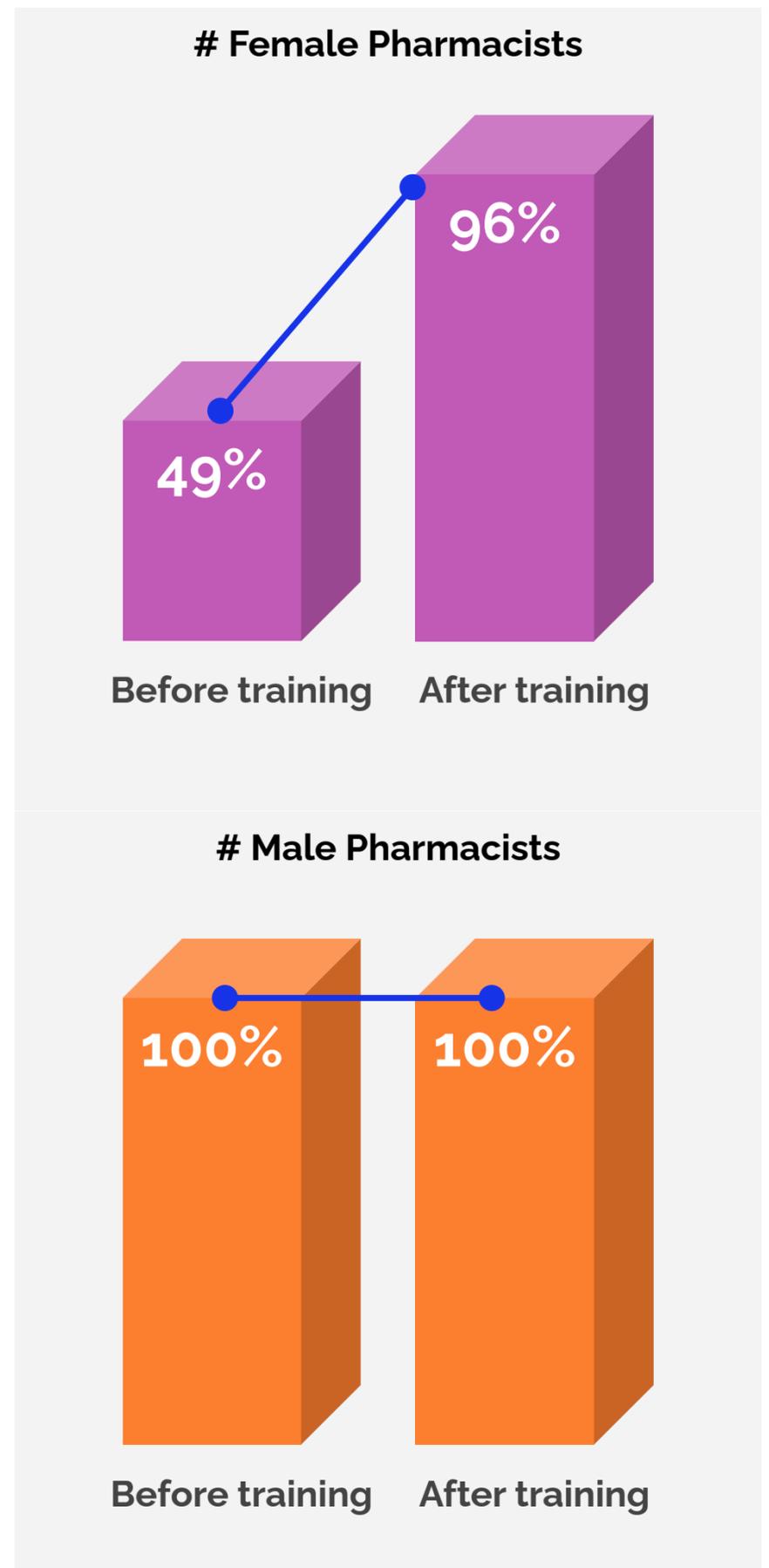
## Case Study: Reproductive Health

Pre- and post-training assessments conducted among 302 pharmacists in the Philippines in 2023 demonstrated substantial gains in reproductive health knowledge among pharmacists of all genders with particularly high levels of improvement for women. Although women began with lower baseline knowledge in this area, scores improved from 13% to 73%, indicating strong responsiveness to digital learning and demonstrating the effectiveness of the training in closing knowledge and capacity gaps among women pharmacists.<sup>18</sup>

### Able to correctly counsel about emergency contraceptive pill dosage and effectiveness



### Able to describe recommended contraceptive stock management practices

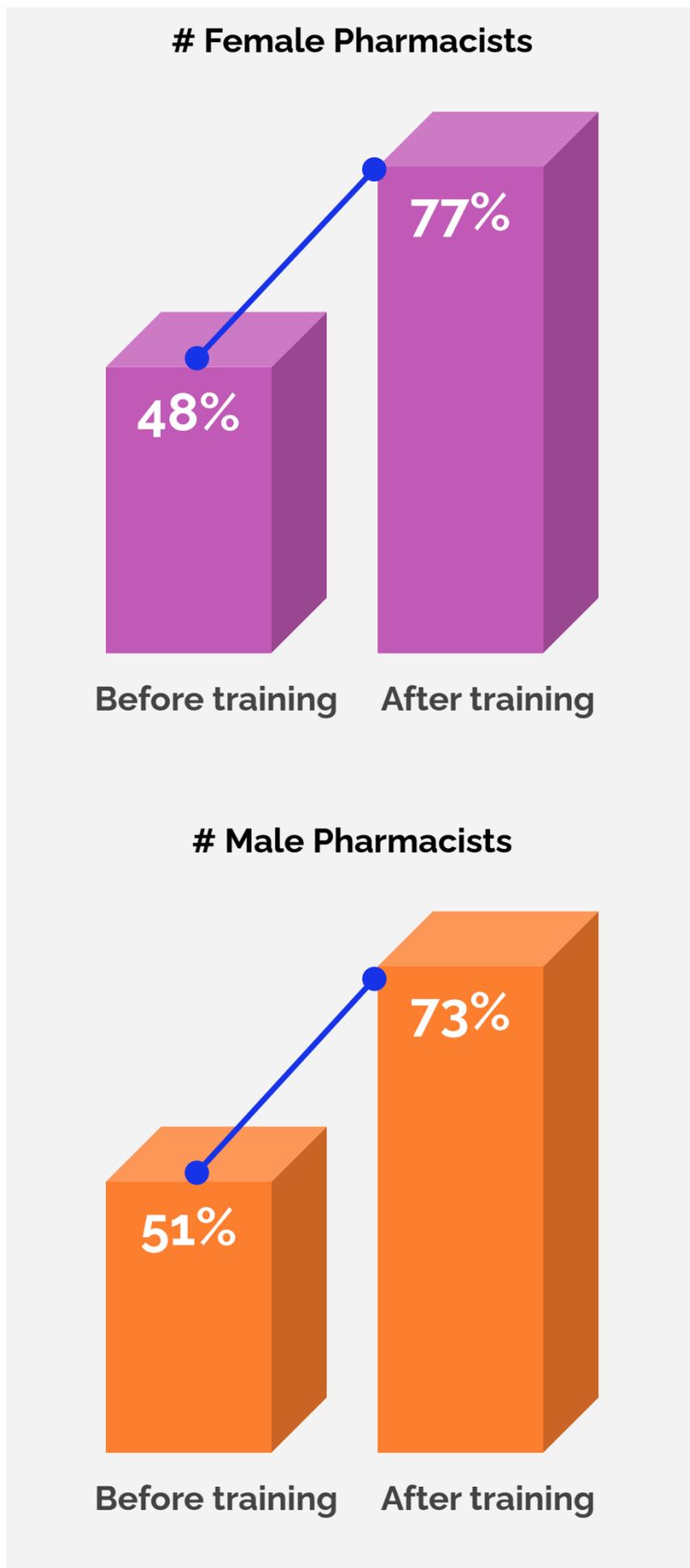


<sup>18</sup> Digital ASRH/FP Continuing Professional Development (CPD) for Pharmacy Professionals Report, SwipeRx, The Philippines, 2023

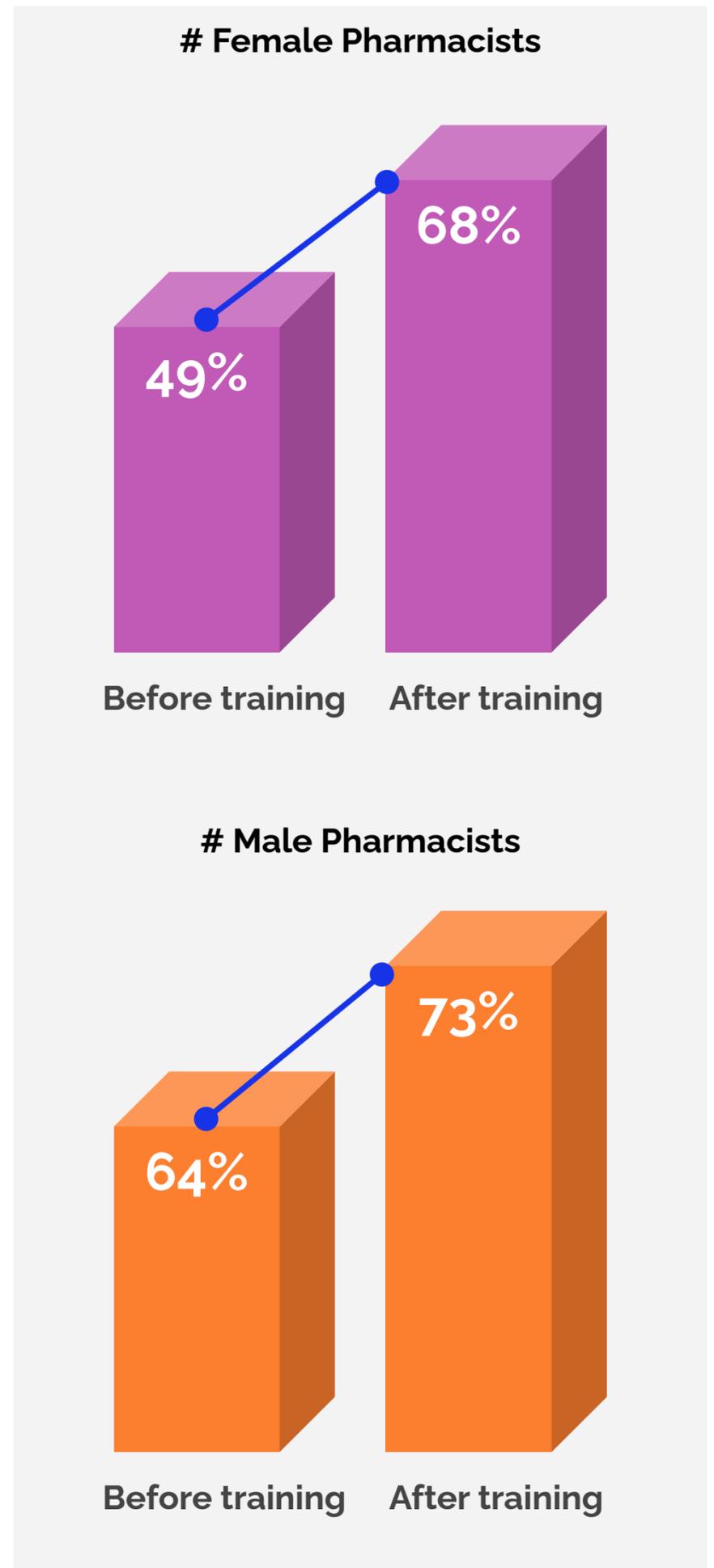
## Case Study: Operational Standards

Pre- and post-training assessments conducted among 418 pharmacy professionals who completed the SwipeRx digital training related to pharmacy standards in Cambodia in 2023 resulted in substantial improvements in women pharmacists' ability to comply with pharmacy standards approved by the Ministry of Health.

### Ability to correctly describe pharmacy record keeping and reporting requirements



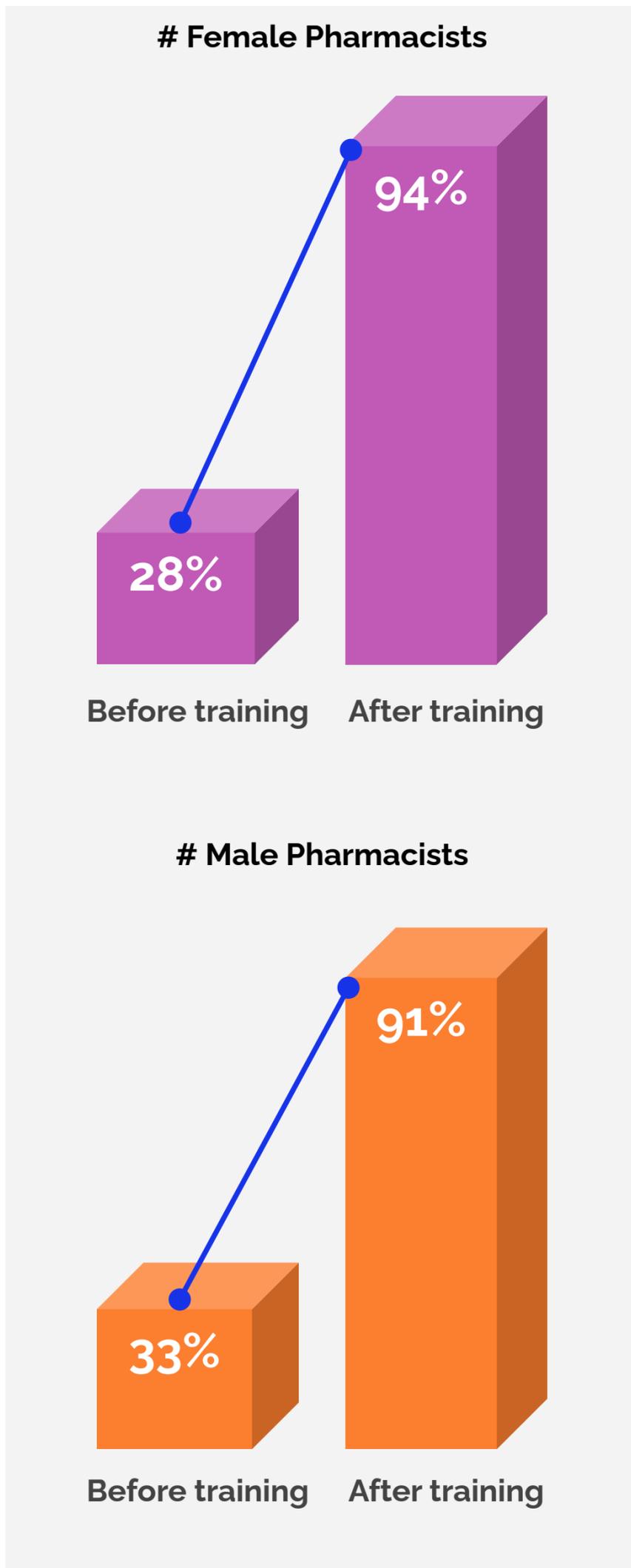
### Ability to adhere to ethical medication dispensing guidelines



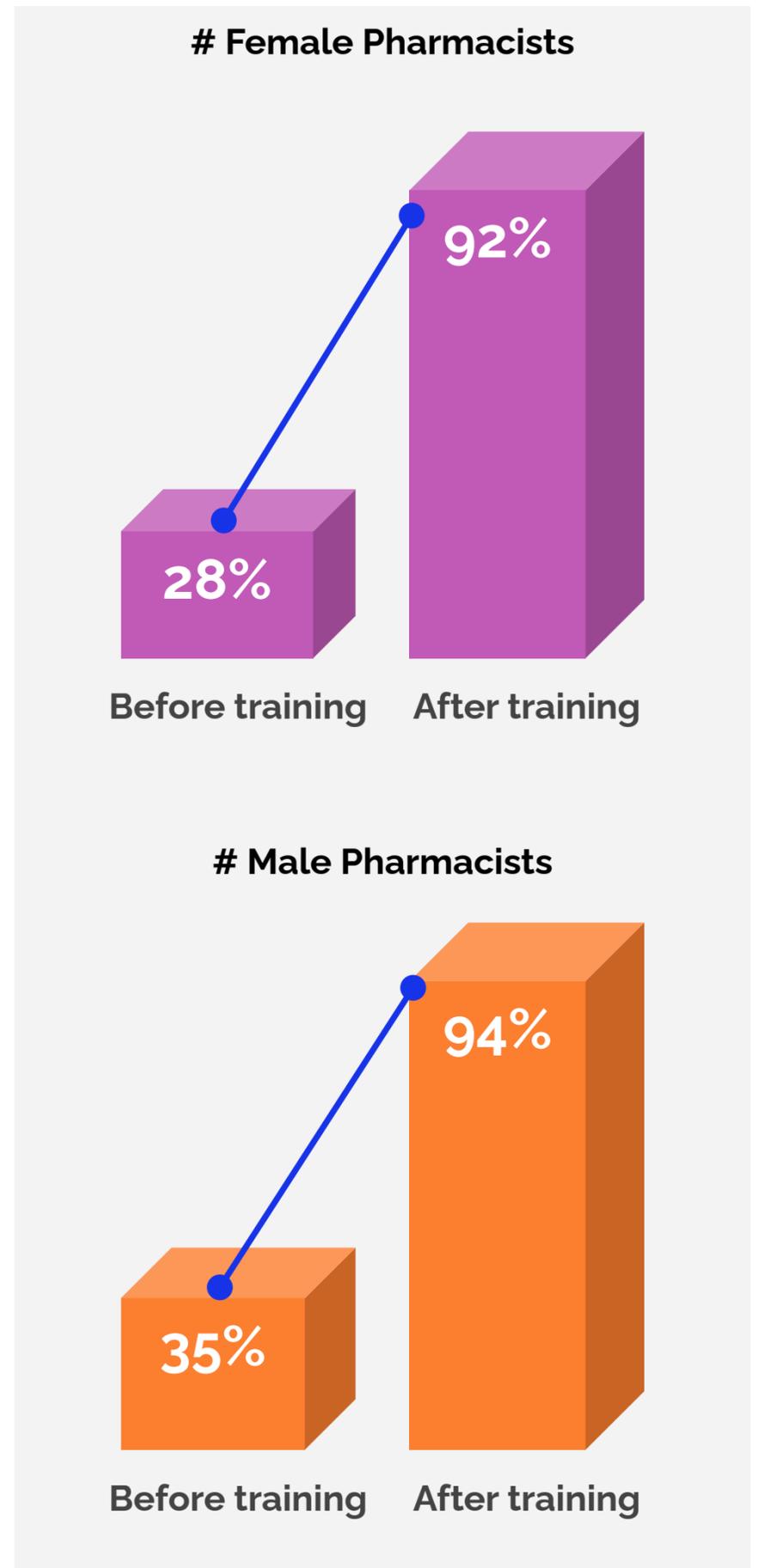
## Case Study: Bone Health

Pre- and post-training assessments conducted among 593 pharmacists in Vietnam in 2025 as part of the SwipeRx digital training related to bone health demonstrate improvements in capacity to serve clients above age 65 in three main areas.

### Ability to correctly complete clinical case studies related to reduction of polypharmacy



### Ability to correctly assess bone density and fracture risk



Results from all 3 case studies highlight the effectiveness of the digital training approach to closing gendered gaps in pharmaceutical knowledge and confidence across multiple topics and country contexts in southeast Asia.

## **Using Technology to Address Gendered Barriers to Pharmacy Supply Chains**

Women pharmacists in many settings face structural barriers to affordable, quality-assured medicines and efficient procurement channels, often linked due to mobility constraints, limited access to professional networks, and reliance on time-intensive, cash-based, and travel-dependent sourcing from offline wholesale markets. In Indonesia, the number of pharmacies transacting through SwipeRx Belanja, the GPO function integrated into the SwipeRx app, grew by 23.7% between 2023 and 2024. As of December 2025, more than 40% of all registered pharmacies in Indonesia have procured quality assured medicine and other pharmacy products through Belanja for less hassle and cost compared to offline procurement. Sourcing products through Belanja allows all pharmacists to save time and money to source quality-assured products for competitive pricing and delivery terms. These efficiencies may be particularly relevant to women who often balance multiple responsibilities across professional, household and caregiving domains, and may also face gender-related financial barriers. Prices at Inofarma pharmacies are 15-20% lower than other retail pharmacy prices as a result.<sup>19</sup> By digitizing the supply chain as well as training opportunities, reducing financial risk through group purchasing, enabling data-driven inventory management, SwipeRx reduces the need for cash-based transactions as well as costs and other vulnerabilities associated with women travelling from their pharmacy to visit wholesale markets or offline trainings. Ultimately, SwipeRx's digital approach to group purchasing increases income and prompts business growth for women pharmacists.<sup>20</sup>

<sup>19</sup> Inofarma Data

<sup>20</sup> Ibid



## **Indah's Story**

*Indah, 24-year-old assistant pharmacist using SwipeRx in Jakarta, Indonesia*

Before 2018, Indah used manual methods to source medicine and other products. She had to wait for sales representatives to visit the pharmacy to place orders, which often delayed restocking and increased risks of stock-outs. Traveling to source medicines was time-consuming and difficult to manage alongside her daily responsibilities in the pharmacy and at home. Using SwipeRx Belanja, allows Indah to order medicines directly from her phone at any time. The platform allows her to compare prices across suppliers, access discounts, and source a wider range of quality assured products in one place. As a result, her pharmacy in Jakarta has expanded the number of SKUs stocked and she has reduced procurement time and stock-out risks.

## Apotek Inofarma

Indonesia has approximately 30,000 community pharmacies, far below the estimated 90,000 needed to meet community-level primary care needs. Pharmacies are highly accessible, with people visiting them roughly ten times more often than physicians, highlighting their critical role in primary care. The shortfall of community pharmacies limits Indonesia's ability to achieve universal health coverage and address pressing public health challenges.

Women comprise over 70% of the pharmacy workforce in Indonesia but own only 25% of pharmacies. This disparity reflects structural and socio-cultural barriers, including family caregiving responsibilities, mobility constraints, limited access to financing, and difficulties

obtaining training and operational tools. Compared to men, women pharmacists surveyed in 2023 reported greater challenges securing working capital, sourcing suppliers, stocking pharmacies, acquiring software, and recruiting staff. These constraints reduce their entrepreneurial risk-taking and limit their ability to expand pharmacy coverage and leadership within the sector.

Apotek Inofarma is a network of franchised pharmacies developed by SwipeRx in Indonesia to support women pharmacists in taking on ownership and leadership roles within the retail pharmacy sector. Unlike typical independent pharmacies, Inofarma provides pharmacy operators with structured support and tools to reduce the financial, operational, and logistical risks of running a pharmacy.

### Inofarma directly mitigates gendered barriers for women pharmacists by:



Reducing financial risk - providing financial access to shared procurement and group purchasing, lowering costs, operational expenses and financial exposure associated with opening and running a pharmacy.



Providing operational support and e-tools to facilitate recommended sourcing and inventory management practices, reducing the need to wait for sales rep visits or leave the pharmacy to purchase from an offline wholesaler.



Expanding professional development opportunities through integrated digital training modules that cover clinical, business, and leadership skills.

Together these inputs result in increased market competitiveness for women-led Inofarma pharmacies.

Preliminary feedback from the first Inofarma stores reflects improvements in revenue as a result of improved stock management practices. Women led and operated Inofarma pharmacies stock 3,000 stock keeping units (SKUs), 3 times higher than the average (800) for retail pharmacies across Indonesia. These practices—facilitated by SwipeRx—enable women pharmacists to earn more than the market norm. In the first 6-months, Inofarma pharmacists earned 8% higher than market norm – a distinction that is expected to grow with time.<sup>21</sup>

Available evidence strongly supports the hypothesis that digital approaches can efficiently enhance women pharmacy professionals' capacity, leadership, and business viability. SwipeRx's broad regional reach and high female participation demonstrate that digital platforms effectively engage women at scale, including in resource-constrained settings. Digital training modules consistently close baseline knowledge gaps, strengthen clinical and client-facing competencies, and build leadership-relevant skills, with women often showing greater learning gains than men. Integrated GPO and digital supply-chain tools further improve operational efficiency, reduce financial and mobility barriers, and increase income. Together, these outcomes show that digital solutions simultaneously strengthen professional capacity, and sustainable pharmacy entrepreneurship for women pharmacists, while improving care delivered to clients – building trust, enhancing safety, and contributing to better health outcomes.

## Future Opportunities & Recommended Actions

The following section outlines practical, evidence-informed strategies with potential to advance gender equality and social inclusion within SwipeRx and across the pharmacy ecosystems in southeast Asia and similar contexts. These approaches draw on established GEDSI frameworks to foster equitable leadership, access, and outcomes for women pharmacists, addressing gendered barriers to training, supply management, pharmacy ownership, and professional growth.<sup>22, 23</sup> Beyond the specific, evidence-based recommendations outlined below, available evidence highlights a need for non-discriminatory legal frameworks and national policy reform to govern equal pay for women and men in the pharmacy sector, childcare and eldercare infrastructure investment, financial inclusion through regulatory reform, and gender equity indicators in health workforce planning.<sup>2</sup> Partners seeking to advance gender equity within the pharmacy channel are encouraged to invest in the following opportunities:

### **Mentorship and Sponsorship**

- Establish formal, structured sponsorship programs where senior pharmacy leaders actively advocate for women's advancement—going beyond traditional mentorship to leverage influence and create pathways to growth.<sup>1, 2</sup>
- Implement mentorship-driven business transition models, encouraging existing pharmacy owners (particularly retiring owners) to mentor women and facilitate ownership transitions, transferring essential business knowledge and networks.<sup>3</sup>
- Create platforms for meaningful conversations addressing female pharmacists' career and professional developmental needs.<sup>24</sup>

<sup>21</sup> SwipeRx Pharmacy Bootcamp Study Results, Indonesia, 2023

<sup>22</sup> Gender Equality in Investment Design – Good Practice Note, Australian Government Department of Foreign Affairs and Trade (DFAT) and Australian Aid, 2022

<sup>23</sup> Gender Equality, Disability and Social Inclusion Analysis - Good Practice Note, Australian Government Department of Foreign Affairs and Trade (DFAT) and Australian Aid, 2023

<sup>24</sup> Bukhari, N., Manzoor, M., Rasheed, H., Nayyer, B., Malik, M., Babar, Z.-U.-D. (2020) A step towards gender equity to strengthen the pharmaceutical workforce during COVID-19. *Journal of pharmaceutical policy and practice*. 13(1), 15.

- Advocate for more gender-responsive pharmacy professional associations and policies including gender balanced leadership within these bodies, profession-wide dialogue, ongoing monitoring, sponsorship of women leaders, and policy reforms as needed.<sup>25</sup> Professional pharmacy associations have potential to play a crucial role in setting gender equitable standards for continuous professional development and pharmaceutical business success.<sup>2,11</sup>

### **Financial Inclusion**

- Create dedicated investment funds, low-interest loans, grants and other types of flexible financing tailored for women pharmacy entrepreneurs through partnerships with financial institutions, banks and supply-chain actors.<sup>3</sup>
- Develop comprehensive finance maps providing information on loans, grants, and investments for women pharmacists.<sup>26</sup> Using a holistic approach—combining financial access with business skills training, networking, and policy advocacy—has potential to foster inclusive entrepreneurial environments, strengthened women-led pharmacy businesses, and drive gender-responsive economic growth.

### **Digital Inclusion**

- Implement bottom-up, context-sensitive approaches: engaging local pharmacists, communities, and policymakers to build digital and health-literacy capacity; ensure regulatory oversight; and prioritizing equity when implementing platforms and e-systems relevant to pharmacy professionals.<sup>9</sup>
- Address infrastructure requirements for reliable electricity and internet connectivity, as well as access to affordable, quality digital devices for women entrepreneurs, digital literacy training integrated into

professional education, and user-centered design purposefully considering women users' needs in LMIC contexts.<sup>9</sup>

### **Gender-Equitable Study & Workplace Policies**

- Advocate for work-life balance support for women pharmacists including childcare, flexible working hours, re-entry options after maternity leave, and flexibility in recognition of caregiving responsibilities.<sup>3</sup>
- Test cooperative pharmacy ownership models, hub-and-spoke systems, and technology-enabled remote consultations to help women balance business ownership with caregiving demands.
- Encourage women pharmacy students to pursue supply chain career opportunities, challenge gender stereotypes about 'women-appropriate' work, provide targeted training for women interested in supply chain management, and adapt logistics roles to reduce unnecessary physical demands.<sup>7</sup>

### **Use Technology to Minimize Gendered-Gaps in Pharmacy Capacity**

- Scale accredited digital training and digital quality improvement tools across additional clinical and practice areas, building on evidence of strong learning gains among women pharmacists.
- Strengthen in-app offline clinical reference and decision-support resources to support day-to-day service delivery and adherence to standards.
- Strengthen routine collection and use of gender-disaggregated platform analytics to inform continuous platform improvement and assess differential impacts across genders.
- Use platform communication channels to disseminate information on external opportunities such as training scholarships, leadership programs, and financing schemes for women pharmacists.

<sup>25</sup> Mill, D., Burton, L., Lim, R., Barwick, A., Felkai, C., Sim, T.F., Dineen-Griffin, S. (2023) A vision to advance gender equality within pharmacy leadership: Next steps to take the profession forward. *Research in social & administrative pharmacy: RSAP*. 19(6), 965–968.

<sup>26</sup> Kazembe, T., Xu, Q., Lockyer, A., Vincensini, V., Njuki, J., Oates, R. Scaling up innovative finance for gender equality and women's empowerment lessons from un women's global practices. UN Women.

## Conclusion & Action Plan

In the years ahead, SwipeRx seeks partnerships and financing to build on results to date and further address gendered barriers, enabling women pharmacy professionals to thrive as healthcare providers, business operators, and leaders across Southeast Asia.

The following prioritized opportunities will guide SwipeRx partnership development efforts in 2026 and beyond:

- **Improve access to digital solutions addressing capacity and operational challenges** by consistently collecting and analyzing gender-disaggregated SwipeRx platform analytics and survey data—including pre- and post-training knowledge and confidence levels—to inform continuous digital quality improvement across clinical care, pharmacy management, and procurement. This includes scaling accredited digital training and quality improvement tools across additional practice areas – including women's health – and countries.
- **Expand access to financing for women seeking pharmacy ownership** by scaling the Inofarma franchise network, with a target of 1,000 women-led pharmacies in Indonesia, and strengthening digital procurement and transaction records through Belanja to improve operational efficiency, reduce business risk, and enhance women pharmacists' readiness to engage with financial institutions and investors.
- **Facilitate mentorship and leadership coaching for women pharmacy professionals** by leveraging SwipeRx's digital platform to connect women pharmacists to peer networks, professional communities, leadership-oriented learning content, and external opportunities such as mentorship programs, leadership training, and financing schemes.
- **Advocate for gender-equitable workplace policies** by conducting additional research on SwipeRx's differential impact by gender and area of practice—including clinical service delivery, procurement, and pharmacy management—and using gender-disaggregated evidence to support dialogue with professional associations, partners, and policymakers on equitable career progression, recognition, and leadership.

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