

PROJECT LAST MILE



COMPENDIUM OF
SCHOLARLY WORK
2010-2020

Yale Global Health Leadership Initiative

INTRODUCTION

Since 2010, Yale has served as the academic partner for Project Last Mile, a public-private partnership that leverages the supply chain acumen and strategic marketing expertise of the Coca-Cola system to strengthen health systems across Africa. For Project Last Mile, a simple question drove a call to action: If you can find a product like Coca-Cola almost anywhere in Africa, why not life-saving medicines? The resulting partnership between the Global Fund, the United States Agency for International Development (USAID), the Bill & Melinda Gates Foundation and The Coca-Cola Company and its Foundation aims to improve the availability of life-saving medicines, drive uptake of public health services, and inspire private sector engagement for global good.

Project Last Mile works directly with Ministries of Health and development partners to develop solutions that address local priorities. The partnership has reached 10 countries with context-driven solutions that range from supply chain management; cold chain maintenance to safeguard vaccines; differentiated services to ensure people can access medicines where and when they are needed; and strategic communications to strengthen demand for health services amongst youth.

Our evaluation of Project Last Mile has produced evidence on the impact of the partnership, as well as insight into the challenges and lessons learned. This compendium captures the scholarly outputs developed as part of our evaluation through the end of 2019, including an online teaching case, peer-reviewed manuscripts, and abstracts presented at diverse global scientific conferences.

We would like to thank The Coca-Cola Company and USAID for their financial support of our work; the Project Last Mile Steering Committee, Project Management Office and country teams for their commitment to generate evidence and exchange learnings for global benefit; and stakeholders across Africa for their participation in this research.

This compendium is based on the evaluation of Project Last Mile (PLM) led by the Yale Global Health Leadership Initiative (GHLI), with financial support from the United States Agency for International Development (USAID) and the Coca-Cola Company. For more information, please contact Erika Linnander, Director at erika.linnander@yale.edu



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Publication

Title: Medical Supply Solutions in Tanzania An Innovative Public-Private Partnership
Yale School of Management Case Study #PH-18-01

Available at: <http://vol12.cases.som.yale.edu/medical-supply-solutions-tanzania/>

Authors: Shirin Ahmed, Elizabeth H. Bradley, Dana Karen Ciccone, Erika Linnander, Kristina Talbert-Slagle, Hannah Wheatley, Christina T. Yuan

Background: This case study is based on information collected by the Yale Global Health Leadership Institute (GHLI) as part of their process evaluation of Project Last Mile in Tanzania. This project represents an innovative partnership between The Coca-Cola Company (TCCC), The Global Fund to Fight AIDS, Tuberculosis and Malaria, the Bill & Melinda Gates Foundation, Accenture Development Partnerships (ADP), and the Medical Stores Department of Tanzania (MSD).

Methods: The information used in this case was collected by a research team from GHLI through a series of key informant interviews and site visits to health facilities in Tanzania. The research team conducted in-depth interviews with more than 60 key informants from July to October 2011 with an additional 24 interviews between October 2012 and May 2013. The team interviewed operational and executive-level representatives from each of the five partner organizations as well as staff and patients from a small sample of health facilities in Tanzania. During the interviews, a standardized discussion guide was used to assess the key informants' perceptions of how the partnership was conceived and implemented, as well as the key informants' roles in the process. Interviews were recorded, professionally transcribed, and analyzed using the constant comparative method of qualitative analysis. From July through August 2011, the research team conducted a series of site visits to MSD warehouses, regional and zonal offices, and health facilities to develop a better understanding of the research context and impact of the partnership at the local level. During the site visits, the research team spoke with staff and patients about supply chain challenges and recent improvement efforts within Tanzania, management processes at the health facility level, and the impact of the knowledge transfer partnership and MSD's new "direct delivery" model. Two members of the research team were fluent in Swahili allowing for the discussions to be held in the language preferred by participants.

Case

Summary: The PLM collaboration in Tanzania demonstrated that private sector business practices were directly applicable to solving the challenges faced by a public organization. The outside assessments gave MSD new perspectives on its internal operations and helped drive change. MSD applied toolkits developed through this collaboration to optimize direct delivery logistics and promote cross-departmental collaboration to pro-actively prevent stock outs.

Direct delivery, in particular, not only improved the corporate image of MSD but influenced the health-seeking behavior of individuals. Unlike the core planning and talent management work streams, which were occurring behind the scenes at MSD, for the first time, community members could see MSD trucks directly delivering medicines to their community health facilities.

From the perspective of the bottlers, this project generated greater understanding of the challenges that MSD faces in delivering medicines and enabled a sense of personal fulfillment for their ability to contribute positively to the health sector in the country. Liaisons have been set up at Coca-Cola Kwanza and MSD to work together directly and foster the ongoing relationship between the two organizations. More importantly, MSD has already begun to take ownership of the tools and processes that were developed during the three project phases. The weekly and monthly planning meetings have been functioning well and guide key decision making without external support.

Publication

- Title:** Process evaluation of knowledge transfer across industries: Leveraging Coca-Cola's supply chain expertise for medicine availability in Tanzania
- Available at:** <https://pubmed.ncbi.nlm.nih.gov/29121051/>
- Published in:** PLoS One, 2017; 12 (11): e0186832
- Authors:** Erika Linnander, Christina Yuan, Shirin Ahmed, Emily Cherlin. Kristina Talbert-Slagle, Leslie Curry
- Purpose:** Persistent gaps in the availability of essential medicines have slowed the achievement of global health targets. Despite the supply chain knowledge and expertise that ministries of health might glean from other industries, limited empirical research has examined the process of knowledge transfer from other industries into global public health.
- Methods:** We examined a partnership designed to improve the availability of medical supplies in Tanzania by transferring knowledge from The Coca-Cola system to Tanzania's Medical Stores Department (MSD). We conducted a process evaluation including in-depth interviews with 70 participants between July 2011 and May 2014, corresponding to each phase of the partnership, with focus on challenges and strategies to address them, as well as benefits perceived by partners.
- Results:** Partners faced challenges in (1) identifying relevant knowledge to transfer, (2) translating operational solutions from Coca-Cola to MSD, and (3) maintaining momentum between project phases. Strategies to respond to these challenges emerged through real-time problem solving and included (1) leveraging the receptivity of MSD leadership, (2) engaging a boundary spanner to identify knowledge to transfer, (3) promoting local recognition of commonalities across industries, (4) engaging external technical experts to manage translation activities, (5) developing tools with visible benefits for MSD, (6) investing in local relationships, and (7) providing time and space for the partnership model to evolve. Benefits of the partnership perceived by MSD staff included enhanced collaboration and communication, more proactive orientations in managing operations, and greater attention to performance management.
- Conclusions:** Benefits perceived by Coca-Cola staff included strengthened knowledge transfer capability and enhanced job satisfaction. Linking theoretical constructs with practical experiences from the field, we highlight the challenges, emergent strategies, and perceived benefits of a partnership across industry boundaries that may be useful to others seeking to promote the transfer of knowledge to improve global health.

- Publication:** A Mixed Methods Evaluation of a Multi-Country, Cross-Sectoral Knowledge Transfer Partnership to Improve Health Systems Across Africa
- Published in:** International Journal of Multiple Research Approaches, 2018; 10 (1): 136-148
- Authors:** Erika Linnander, Katherine LaMonaca, Marie Brault, Medha Vyavahare, Leslie Curry
- Purpose:** Providing access to essential medicines is foundational in the achievement of global health targets. Although public-private partnerships might benefit the performance of national supply chains, the complexities of knowledge transfer processes and health system contexts pose challenges to partnership evaluation and the generation of evidence about successful supply chain strengthening effort.
- Methods:** We designed this study as a longitudinal, convergent mixed methods evaluation, an approach that was distinct from the dominant monitoring and evaluation frameworks used by each of the PLM partner organizations.
- Results:** The quantitative and qualitative data provide complementary insights into the implementation of the program to date. The quantitative metrics include a range of indicators of improved access (pick-up points for medications), reach (patients enrolled) and scope (medicine parcels). The qualitative data comprise the experiences and perspectives of a wide range of stakeholders regarding the process by which the quantitative metrics are changing over the course of program implementation. Because qualitative data are more effective than are quantitative data for characterizing real world dynamic processes and implementation of complex interventions, the key informant interviews provide essential inputs that complement the quantitative measures of progress metrics. During the initial phase of the PLM team's collaboration with the NDoH, the CCMDD program experienced a large increase in the number of pick-up points, including both governmental and external pick-up points. The number of alternative pick-up points enrolled in the program rose from approximately 180 in April 2016 to 411 in October 2016, an increase of nearly 130%. Key informant interviews identified three fundamental assets that PLM contributed to the CCMDD effort: (a) the ability to engage and align with CCMDD stakeholders, (b) the infusion of unique private-sector approaches to problem-solving within the CCMDD, and (c) the improvement of inter- and intra-sectoral collaboration and communication.
- Conclusions:** We have described here the strengths and challenges of applying a mixed methods approach to evaluating complex health systems strengthening intervention aiming to transfer private sector knowledge to public health ministries. Our findings and reflections might be useful to global health researchers seeking to evaluate complex multi-country partnerships for health systems strengthening, as well as for practitioners seeking novel approaches to persistent supply chain challenges in resource-limited settings.



Abstract Title: An Innovative Public-Private Partnership: Medical Supply Solutions in Tanzania

Presented at: NRSA Trainees Research Conference, 2012, Orlando, Florida

Authors: Christina Yuan, Hannah Wheatley, Dana Ciccone, Erika Linnander, Elizabeth Bradley

Objective: The purpose of this study is to examine the perceived successes and challenges associated with the development and implementation of a novel “knowledge transfer” public-private partnership.

Background: A perennial question in the global health community has been if you can find a bottle of Coca-Cola in the remotest villages in the world, then why not life-saving drugs and medical supplies? As a novel response to this question, The Coca-Cola Company (TCCC), in collaboration with the Bill & Melinda Gates Foundation, the Global Fund to Fight AIDS, Tuberculosis, and Malaria, Accenture Development Partnerships, and the Medical Stores Department of Tanzania, formed an innovative public-private partnership to leverage TCCC’s expertise in supply chain management to improve the distribution of pharmaceuticals and medical supplies in Tanzania.

Methods: We used a standardized interview guide to conduct in-depth interviews with representatives from each of the five partner organizations. Interviews were recorded, transcribed, and analyzed using the constant comparative method of qualitative analysis.

Results: In a preliminary analysis of factors associated with the development of the partnership, perceived successes included the novelty of a private partner sharing its core business expertise, the alignment of partner interests and strengths, the partners’ flexibility in adapting to project needs, and the advocacy of high-level champions. Perceived challenges included the difficulty in defining how TCCC could best leverage its core business expertise and the public sector’s initial skepticism of a partnership model that was based on the transfer of knowledge (as opposed to the transfer of material resources). In terms of the implementation of the partnership, perceived successes included local ownership of the project, a dedicated implementation team to oversee knowledge transfer activities, and the development of practical, data-driven solutions. Perceived challenges included data and resource limitations, pressure from competing initiatives and priorities, and issues related to the sustainability of the partnership.

Conclusions: Public-private partnerships play an important role in the global health landscape. In this study, we examine the perceived successes and challenges associated with a “knowledge-transfer” public-private partnership in order to guide future replication efforts of this novel partnership model.

Abstract Title: Project Last Mile: Applying Coca-Cola's Expertise to Improve Delivery of Life-Saving Medicines

Presented at: Health and Humanitarian Logistics Conference, 2015, Cape Town, South Africa

Authors: Adrian Ristow, Shirin Ahmed, Erika Linnander, Leslie Curry

Background: The global health and development community is beginning to leverage the knowledge and expertise of industries outside of healthcare to address complex global health challenges, but little is known about factors that drive successful efforts across industries and sectors. Project Last Mile (PLM) is a unique public-private partnership that aims to transfer Coca-Cola's logistic, supply chain and marketing expertise to improve public health systems across Africa. By bringing together partners from across sectors, including Coca-Cola, USAID, Global Fund, and the Gates Foundation, the project aims to help get medicines and supplies out to the communities that need them most.

Methods: The Yale Global Health Leadership Institute (GHLI) used qualitative research methods to conduct a process evaluation of PLM, systematically documenting how the partnership came together, tracking implementation activities and identifying key challenges and factors for success. From 2011 to 2014, GHLI conducted, analyzed, and synthesized a series of 70 semi-structured qualitative interviews with key informants in Tanzania and Ghana, where the project has been implemented.

Results: Expertise from Coca-Cola has not only helped improve distribution and availability of medicines but also contributed to important shifts in the business culture of public health entities. The following themes were found to be essential for partnership success: 1) Flexible approach to partnership design, 2) Adequate engagement from global and national development partners, 3) Adapting Coca-Cola approaches to public and private environments, 4) Engagement of boundary spanners to translate across industries and sectors, 5) Investment in local management and implementation capacity, 6) Close interactions between local bottlers and public health staff, 7) Accommodating competing demands of bottlers and public health staff, and 8) Alignment with complex funding environments.

Conclusions: These findings can inform development and implementation of PLM in other settings as well as other partnerships seeking to drive improvements in global health.

Abstract Title: The Expansion of Project Last Mile: Balancing Global Scale and Local Fit to Bring Private Sector Expertise to Public Health Agencies

Presented at: Health and Humanitarian Logistics Conference, 2016, Atlanta, Georgia

Authors: Katherine LaMonaca, Leslie Curry, Adrian Ristow, Trip Allport, Alexandra Scott, Erika Linnander

Background: Although the global health community increasingly establishes partnerships across industry boundaries to address complex challenges, examples of scalable, multi-country partnerships are limited. In particular, the requirements of early-stage alignment for successful expansion are not well understood.

Methods: Project Last Mile (PLM) aims to transfer Coca-Cola's logistic, supply chain, and marketing expertise to improve public health systems across Africa. Since PLM's initial work in Tanzania and Ghana, a Global Development Agreement has formed between Coca-Cola, USAID, the Global Fund, and the Bill & Melinda Gates Foundation to partner with 10 African countries by 2020. We report PLM's expansion to three countries in sub-Saharan Africa, drawing on interactions with PLM partners to describe country-specific approaches and identify factors that promote early-stage alignment with country priorities.

Results: PLM works with ministries of health and local Coca-Cola bottling companies to plan interventions that align with public sector priorities and private sector expertise, resulting in a variety of unique programs tailored to local context. Current partnerships exist with three sub-Saharan African governments to expand medicine pick-up points for patients with chronic illnesses, optimize distribution networks, develop logistics staff capacity, and improve cold chain preventative maintenance. These interventions emerged through the (1) identification of opportunities by established in-country development partners (2) targeted assessment of opportunities by experienced individuals in the Coca-Cola system, (3) alignment with longer-term investments in supply chain development, and (4) strategic use of diverse funding sources from project partners.

Conclusions: PLM's country-specific approach demonstrates the need for significant investment in early-stage alignment and shows the benefit of flexible funding mechanisms like the Global Development Agreement to promote adaptation of partnership models. These findings can inform the development of other partnerships seeking to scale across country settings.

Abstract Title: Successful Private Sector Engagement in Global Health: Lessons from Project Last Mile

Presented at: Global Supply Chain Summit, 2017, Accra, Ghana

Authors: Katherine LaMonaca, Erika Linnander, Leslie Curry

Background: Like several other of multinational corporations, Coca-Cola's world-class logistics, supply chain, marketing, and human resource development capacity have resulted in exceptional market penetration in hard to reach areas across Africa. Project Last Mile is a public-private partnership that aims to apply these core business capabilities to help improve public health systems across Africa. Partners include the Coca-Cola Company, The Coca-Cola Africa Foundation, the United States Agency for International Development (USAID), The Global Fund, and The Bill and Melinda Gates Foundation. In the context of Project Last Mile, partners have engaged public sector agencies responsible for medical supply chains in Liberia, Mozambique, Nigeria, Swaziland, South Africa, and Tanzania. This investment in early-stage project alignment and start-up provides a multi-country platform for the study of the development of effective global health partnerships.

Purpose: Despite the knowledge and expertise that ministries of health might glean from these private sector companies, limited empirical research has examined the early-stage processes that underpin effective partnership between public and private sector actors. Accordingly, we sought to: 1) characterize early stage engagement in depth from the perspectives of PLM key informants who are most knowledgeable about the work, and 2) extract overarching principles of engagement to inform future efforts in PLM and beyond.

Methods: From January through June, 2017, As part of a larger longitudinal, mixed-methods evaluation of PLM, we conducted focal study of early-stage processes using in-depth interviews with 18 members of the PLM partnership with deep expertise and experience in the early-stage engagement phase of the project. Participants represented all of the PLM partner organizations, and included both global organizational leadership and field-based staff. The interview guide explored key informant experiences in the developmental phases of PLM across 6 country settings, with a focus on strategies undertaken to develop relationships, approaches to understanding the environment in order to determine the country-specific needs, and processes for negotiating and scoping roles across the project. Respondents were encouraged to describe in detail success and challenges, both expected and unexpected, during development and early-stage implementation.

Results: Participants described four central elements of early stage engagement with private and public sector organizations: (1) achieving and maintaining partner trust based on commitment to a shared vision despite highly diverse organizational missions and incentives, (2) explicitly acknowledging diversity in assets and defining complementary roles to leverage that diversity, (3) investing in deep country-specific assessment and adaptation of the approach in each country to create a careful and precise fit between both public sector and private sector operating contexts, and(4) infusing private sector principles to manage project momentum. Within each of these elements, participants described concrete examples of challenges, opportunities, and approaches used to promote effective partnership and mitigate inherent gaps between public and private sector contexts. Specifically, we describe the global governance practices, country-specific staffing and concept development milestones that have emerged in pursuit of each of the four elements of early-stage engagement.

Conclusions: Lessons from the Project Last Mile Partnership may be useful to other global health agencies and organizations seeking to proactively invest in evidence-based approaches to partnership development to effectively engage private sector companies in public health systems strengthening.

- Abstract Title:** Project Last Mile in South Africa: Leveraging Private Sector Expertise to Strengthen De-centralized Access to Life-Saving Medicines in the Public Health Sector
- Presented at:** The HIV Coverage, Quality, and Impact Network (CQUIN) Annual Meeting, 2018, Maputo, Mozambique
- Authors:** Phil Roberts, Trip Allport, Carla McIntosh, Adrian Ristow, Alexandra Scott, Sarah Christie, Erika Linnander
- Background:** Limited access to life-saving medicines threatens global health. Project Last Mile (PLM) is a private-public partnership supported by a Global Development Alliance and works directly with local Departments of Health to improve universal access to life-saving medicines, including vaccines.
- Methods:** PLM's model is differentiated by a detailed Engage & Alignment phase at inception, whereby members of the Coca-Cola system work directly with government health officials to troubleshoot gaps and synergize solutions with the niche expertise that the Coke ecosystem affords, such as route-to-market economies for life-saving medicines; diagnostic tools for locating demand-driven health services and commodities; effective and cost-efficient outsourcing; strategic marketing; and capacity building. PLM measures progress and impact using a participatory, mixed methods, longitudinal approach. The Yale Global Health Leadership Institute tracks quantitative data from PLM partners to measure changes in performance and gathers qualitative data from key informant interviews to learn about program context, successes, and challenges over time. Field visits after critical project phases are conducted by the Yale team to gather contextual insights. To date, Yale has conducted two site visits; held structured observations at CCMDD PuPs and performed 38 interviews with key stakeholders.
- Results:** Since late 2015, the CCMDD programme has vastly expanded, particularly with the onboarding of external PuPs, health care facilities participating in the program and patients being registered to collect their medication parcels from external pick-up points. PLM's contributions have been considered highly valued and widely catalytic in this regard. Key contributions of the partnership have included: private sector technical expertise, alignment with stakeholders and support partners, ongoing communication, accessibility and responsiveness to NDoH, provincial and district health level authorities and support partners, adaptation and flexibility to contextual and fiscal constraints, and network and boundary spanning, in a complex, multi-sectoral project.
- Conclusions:** The CCMDD program has vastly expanded since the partnership with PLM began in December 2015. Although the accelerated growth cannot be directly linked, PLM's partnership with NDoH is considered highly catalytic in this regard. PLM was able to provide strategic geomapping data to propose demand-driven pick-up points and district-based decongestion plans. PLM was also able to serve a coordinating function for the multi-sectoral program, assisting to align private and public sector stakeholders; bring corporate pick-up points on board using a franchise model approach; and to assist NDoH with third party contract negotiations and tender proposals. PLM was also able to propose and secure innovations for CCMDD delivery via the CIPLA Foundation, particularly in rural areas which lacked infrastructure. To date, there are over 3100 health facilities registered with the CCMDD programme and over 1.5M patients actively enrolled across eight provinces, compared to 592 facilities and 238,000 patients just two years ago. This partnership and process of alignment shows promise for similar contexts which can benefit from private sector expertise. PLM's private sector expertise; ongoing communication and responsiveness; and flexibility and alignment with key stakeholders were considered critical elements for a successful collaboration. Challenges include how to sustain these efforts beyond PLM's strategic engagement and cascade the capacity, technology and innovation necessary for data-driven approaches in resource-constrained settings.

Abstract Title: Project Last Mile in South Africa: Leveraging private sector expertise for differentiated distribution of life-saving medicines.

Presented at: Health and Humanitarian Logistics Conference, 2018, Dubai, UAE

Authors: Sarah Christie, Leslie Curry, Phil Roberts, Katherine LaMonaca, Erika Linnander

Background: South Africa is home to 7 million people living with HIV. In addition, non-communicable diseases (NCDs) are among the leading causes of death in the nation. Such diseases often require chronic medications taken daily to prevent disease progression and illness. With the adoption of Universal Test and Treat (UTT) guidelines for HIV in 2016, South Africa anticipates a substantial uptick in the number of patients on chronic medications, including anti-retrovirals (ARVs). Ensuring that patients have consistent availability of life-saving medicine will be essential to decongest health facilities, conserve resources and meet this unprecedented demand in the public health sector. Addressing this challenge requires innovations in differentiated service delivery (DSD), defined by the International AIDS Society as ‘a client-centered approach that simplifies and adapts health services in ways that both serve patient needs and reduce unnecessary burden on the health system.’

Methods: Project Last Mile (PLM) is a public-private partnership (PPP) that shares the business acumen and route-to-market innovation of the Coca-Cola system with Ministries of Health across Africa to improve availability of life-saving medicines in the public health sector. In South Africa, PLM partnered with the National Department of Health (NDoH) to support their Central Chronic Medicine Dispensing and Distribution (CCMDD) initiative, a program that increases access to chronic medicines for stable patients. The CCMDD program enables patients to pick up medicines in convenient, community-based retail locations where they live and work rather than public health clinics. Medication parcels are packaged and distributed to pick-up points by third party service providers supported by NDoH. External pick-up points are reimbursed a small amount for each parcel they dispense. In 2016, PLM partnered with the NDoH to assist with: 1) strategically locating new pick-up points using geomapping technology, 2) building route-to-market capacity for CCMDD service providers, and 3) facilitating private sector engagement with external pick-up points, using a franchise model. PLM also developed a robust business case for the NDoH, demonstrating the impact of the CCMDD program on patient outcomes and averted healthcare costs. The CCMDD program has vastly expanded since PLM’s involvement and while the accelerated growth cannot be directly linked, PLM’s contributions are regarded by stakeholders as highly catalytic and significant.

Results: PLM leveraged private-sector expertise through employment of a full-time delivery lead with deep experience within the Coca-Cola system. PLM provided strategic geomapping data to propose demand-driven pick-up points and inform district-based targets. PLM also served a critical coordinating function for the multi-sectoral program, working to align private and public-sector stakeholders; to bring corporate pick-up points on board using a franchise model approach; and to assist NDoH with third party contract negotiations and tender proposals. Finally, PLM proposed and secured innovative pick-up point solutions, particularly in rural areas which lacked brick and mortar locations for CCMDD. To date, there are 3216 health facilities registered with the CCMDD programme (~65% of all facilities) and over 2M patients cumulatively enrolled across eight provinces, compared to 592 facilities and 238,000 patients just two years ago. A total of 894 external pick-up points have been established through successful negotiations with local retailers such as Clicks, Dischem and MediRite. A proof-of-concept container erected by the CIPLA Foundation in October 2017 currently serves as a CCMDD pick-up point for 1700 patients, with the model being scaled to eight such units in KwaZulu-Natal province. Significant savings are predicted with bringing this service delivery model to scale by 2020, saving over 1B ZAR for patients and 4B ZAR for NDoH.

As the global monitoring and evaluation (M&E) partner, we conducted interviews with 26 key stakeholders, including representatives from the private sector, public sector and donor community (e.g., USAID). Stakeholders highlighted the value of PLM's geo-mapping technology, strategic application of data and business analytics to expand access to life-saving medicines through external pick-up points. Stakeholders also lauded the ability of PLM to be flexible and responsive in problem-solving, often serving as an effective liaison, spanning the boundary between public sector aspirations and private sector interests. Progress was further supported by ongoing intersectoral communication and alignment; flexibility to workflows; and innovation – such as facilitating the pre-fabricated container as a CCMDD pick-up point in resource-strapped KwaZulu-Natal. Financial constraints due to the rapid expansion of CCMDD threatened growth of the program and its credibility in 2017. Persistent communication led by PLM helped realign stakeholders and ease tension, by focusing on their shared commitment to the greater good, i.e., patient benefit.

Conclusions: Private sector inputs are highly valued by stakeholders, both for technical knowledge and business acumen, as well as for 'soft skills' such as boundary spanning, ongoing communications and responsive leadership. Early investment to ensure that projects are relevant, country-specific and aligned to long-term goals for public health systems facilitates ownership and builds trust in the partnership. Future private: public partnerships that infuse innovation, business analytics and new ways of thinking into public sector programs have great potential, even as they remain cognizant of unanticipated fiscal constraints and threats to sustainability within the public health sector.

Abstract Title: Trust in Global Health Partnerships: Lessons from Project Last Mile.

Presented at: Consortium of Universities for Global Health Conference 2019, Chicago, Illinois

Authors: Erika Linnander, Sarah Christie, Emily Cherlin, Leslie Curry

Background: Although achievement of the Sustainable Development Goals will likely require meaningful public sector engagement with the private sector, little is known about how trust evolves in such partnerships. In 2014, Project Last Mile (PLM) was established as a private-public partnership that leverages The Coca-Cola system's supply chain expertise to improve availability of essential medicines throughout Africa. This qualitative study was conducted to understand whether and how trust manifested in PLM.

Methods: Fifty-eight (58) interviews with a purposeful sample of key informants were conducted in Mozambique and South Africa after discrete project phases in 2016 and 2017 using a semi-structured discussion guide. Interview transcripts were coded for thematic analysis in AtlasTIV.7 to identify emergent constructs that limited or promoted trust among partners.

Results: During partnership development, coordination and communication by PLM managers to align role expectations and appropriate timing of inputs among public and private sector partners facilitated initial trust and participation in the partnership. Public brand association with Coca-Cola was described as an asset in Mozambique and a potential liability in South Africa. In both settings, trust developed over time, and consolidated as PLM delivered on workstreams. During partnership implementation, transparent data sharing, open communication and inclusive governance appeared to facilitate trust across stakeholders. PLM Country Leads became embedded in the system as 'go-to' people, trusted across sectors. PLM was perceived to bring an objective, performance-based lens that catalyzed project momentum, and participants on the ground did not describe perceived conflicts of interests or perverse motivations for Coca-Cola engagement.

Conclusions: Trust can be fostered by directly engaging with stakeholders regarding brand association, sensitivities and motivations up front, and revisiting over time. Dynamic team leaders and investment in governance and management practices can ease tensions and realign stakeholders when sector priorities conflict or pace wanes. While such partnerships can pose potential for conflicts of interest, this did not manifest on the ground – with both private and public sector agents aligned for community benefit. Lessons learned from PLM signal potential for future investment in multi-sectoral partnerships, when issues of trust and motivation are addressed openly and proactively.



- Abstract Title:** Project Last Mile in the Kingdom of eSwatini: Leveraging Private Sector Marketing Expertise to Inform Demand Creation for HIV Services for Young Women – the Girl Champ Evolution
- Presented at:** Global Health and Innovation Conference, Unite for Sight, 2019, New Haven, Connecticut
- Authors:** Sarah Christie, Erika Linnander, Marie Brault, Amanda Manchia, Alexandra Scott, Katherine Mertens, Leslie Curry
- Background:** Per UNAIDS, 16.7% of young women in eSwatini were living with HIV in 2017, compared to 3% of male peers. Project Last Mile (PLM) targeted adolescent girls and young women (AGYW) with a multi-sectoral demand creation strategy to encourage uptake of HIV prevention services in Manzini district.
- Methods:** PLM is a public-private partnership that leverages strategic marketing expertise from The Coca-Cola Company to strengthen demand for services in public health systems in Africa. In eSwatini, PLM worked with the Ministry of Health to co-create a demand creation strategy that would attract AGYW to health services. Yale uses mixed methods to assess the outcomes of PLM projects over time.
- Results:** The demand creation strategy was based on in-depth, qualitative research using ZMET® with 12 young Swazi girls, who shared their challenges with HIV prevention via consumer-provided imagery. FCB Africa developed the Girl Champ strategy to reach AGYW with health services. Interviews with 19 key informants confirmed broad receptivity to the research findings and approach. Girl Champ offers AGYW access to health information, wellness activities and support in a girls-only, fitness environment. In November 2018, the intervention was piloted in three clinics after community mobilization and training of frontline healthcare workers (HCWs). 1,936 girls registered for health services, with 9% (n=172) accessing same-day consultations, including HIV testing. 547 (79.7% between 14-19 y/o) completed post-evaluation surveys, which indicated high acceptability.
- Conclusions:** Public-private sector partnerships may be uniquely positioned to develop, deploy and evaluate demand creation interventions that resonate with local communities. The Girl Champ strategy has broad potential for settings where adolescent and young women face similar barriers to HIV prevention.

Abstract Title: Uptake of a National Differentiated Service Delivery Model for Patients on Antiretroviral Treatment (ART) and its Association with Retention on ART in South Africa

Presented at: 14th International Conference on HIV Treatment and Prevention Adherence, 2019, Miami, Florida

Authors: Sarah Christie, Lingrui Liu, Mayur Desai, Merlin Pillay, Maggie Munsamy, Phil Roberts, Erika Linnander

Background: South Africa has the highest population burden of HIV and supports the largest antiretroviral therapy (ART) program globally. In 2014, the National Department of Health (NDoH) launched the Centralised Chronic Medicines Dispensing and Distribution (CCMDD) program to provide stable HIV+ patients with access to ART via community-based pick-up points. The study objectives were to document the expansion of CCMDD and to examine the association between CCMDD uptake and retention on ART at the district level.

Methods: Yale monitors CCMDD enrollment as part of its mixed methods evaluation for Project Last Mile (PLM), a public-private partnership that provides strategic support to CCMDD. Cumulative data on CCMDD uptake [i.e., patients enrolled, facilities registered, and pick-up points established] are maintained on a portal, and were extracted for analysis. Data for total patients remaining on ART (TRoA) are collected monthly by NDoH and aggregated by district. TRoA data from all 46 districts participating in CCMDD were recently made available through the 2017-2018 District Health Barometer, a dashboard annually released by the NDoH. We used correlation analysis to examine the association between CCMDD uptake and TRoA.

Results: Between April 2016 and March 2018, 3,216 health facilities registered with CCMDD, and 847 external pick-up points were established. A total of 1,370,414 patients were active on CCMDD, including 74.1% collecting ART in March 2018. Across districts, 25.8% of all TRoA patients were active on CCMDD in March 2018 [range 0.04-59.7%]. We found positive correlations between time since CCMDD was initiated and number of patients on CCMDD ($r=0.51$, $p<.001$), and between number of active ART patients on CCMDD and TRoA ($r=0.73$, $p<.001$) at district-level.

Conclusions: A growing number of patients are accessing ART through CCMDD, and districts who initiated early are seeing greater uptake over time. This signals potential for expanding this differentiated service delivery model in similar settings.

Abstract Title: Project Last Mile (PLM) in West Africa: Leveraging Private Sector Expertise and Sustainable Route-to-Market (RTM) Models to Bring Life-Saving Medicines to the Last Mile

Presented at: Health and Humanitarian Logistics Conference, 2019, Kigali, Rwanda

Authors: Jonathan Halse, Trisch Kirkpatrick, Sarah Christie, Adeola Ayedun, Alexandra Scott, Erika Linnander

Background: Liberia and Sierra Leone have weathered a recent Ebola outbreak that has tested the public health system's capacity to provide consistent access to medical commodities. The private sector's route-to-market models may be adapted to improve availability of medicines at the last mile.

Approach: Project Last Mile (PLM) shares the route-to-market expertise of The Coca-Cola Company with Ministries of Health across Africa to improve availability of essential medicines. PLM was supported by USAID to adapt and test a last mile delivery model (LMDM) to ensure medicines are optimally allocated and available in health facilities in Liberia. In partnership with the Central Medical Stores (CMS), PLM designed and piloted a LMDM based on a PreSell distribution model used by Coca-Cola which leveraged existing CMS resources to replenish stock at all 51 health facilities in the county monthly.

Results: Over the 12-week pilot, we monitored availability of 300+ commodities during monthly visits. Average availability of essential medicines in public facilities improved from 33.2 to 47.4 of 142 commodities (+43%). Only 8% of 1,894 replenishment orders were fulfilled due to lack of inventory at County level. Independent interviews with 15 key stakeholders revealed consistent buy-in for this LMDM, citing improved data visibility, accountability, and service expectations at facility-level.

Conclusions: Private-sector distribution models can be adapted for the public sector and may improve availability of essential medicines. However, stocks must be adequate at central level to maximize benefit. This LMDM is also being piloted in Sierra Leone, with early results indicating similar improvements.

Abstract Title: Applying Private Sector Solutions to Optimize Routes and Build Capacity for Sustainable Supply Chain Management (SCM) in the Public Sector – Project Last Mile in Mozambique

Presented at: Health and Humanitarian Logistics Conference, 2019, Kigali, Rwanda

Authors: Jose Neves, James Flood, Susan Meiring, Rushika Shekhar, Jonathan Halse, Sarah Christie

Learning

Objectives: Using actual drive-time data from Nampula province, participants will understand 1. how geomapping spatial software and analysis can be applied to optimize routes, plan vehicle usage, address seasonal variation, and save costs, and 2. how private sector expertise can be integrated into public sector operations for sustainability.

Rationale: Resilient supply chains are responsive to dynamic factors that influence distribution, including changes in demand and infrastructure, as well seasonal fluctuations and natural disasters. Geospatial tools and predictive analytics can assist public supply chain agencies to plan optimized distribution routes and build a central repository of location data and routing plans which can be updated with new information or accessed in times of crises for emergency response. Despite the potential benefit of these tools, there are limited examples of their practical application in the public health sector.

Solution: Project Last Mile (PLM) leverages the logistics expertise of The Coca-Cola Company to improve availability of life-saving medicines. This case focuses on PLM's partnership in Mozambique with the Central Medical Stores (Central de Medicamentos e Artigos Medico, CMAM). Using geospatial analysis and routing software from Frontline Research Group and support from Coca-Cola Beverages Africa, PLM is planning optimized distribution routes in all provinces, while building CMAM capability to sustain this function. Data on the road network, health facilities, high-risk points of interest, and medical storage units, were shared with Humanitarian OpenStreetMaps Team (HOT) after the Idai cyclone in Sofala province to assist with disaster relief, highlighting the extended benefits of route optimization.

Abstract Title: Project Last Mile and the Girl Champ Brand in eSwatini: A Mixed Methods Evaluation to Understand How Private Sector Expertise Can Promote Uptake of HIV Prevention Services Amongst Adolescent Girls and Young Women

Presented at: AIDS Impact Conference, 2019, London, United Kingdom

Authors: Marie Brault, Sarah Christie, Sasha Aquino, Abigail Rendin, Alexandra Scott, Khabonina Mabuza, Leslie Curry, Erika Linnander

Objectives: eSwatini has the highest prevalence of HIV worldwide, with 16.7% of young women living with HIV in 2017, compared to 3% of male peers. Demand creation for health services, including HIV testing remains a challenge in LMICs. Private sector corporations with strategic marketing expertise have potential to drive health-seeking behavior and support demand creation for HIV services, but there is a paucity of such efforts in practice and limited understanding of how these partnerships work.

Project Last Mile (PLM) is a public-private partnership that applies strategic marketing and supply chain expertise from The Coca-Cola Company to strengthen public health systems in Africa. In eSwatini, PLM worked with the Ministry of Health and National Emergency Response Council on HIV and AIDS (NERCHA) to co-create a strategic marketing approach to attract adolescent girls and young women (AGYW) to health services. We used a mixed methods, longitudinal design to understand the outcomes of this project. Specifically, we assessed stakeholder experiences with the PLM approach to demand creation, including local receptivity, ownership, and perceived value of the strategic marketing process, initial market research, and the resultant strategy.

Methods: Yale leads the Monitoring & Evaluation for the partnership and collects quantitative and qualitative data to assess the inputs, outputs, outcomes and impact of PLM projects over time. The demand creation strategy was based on a strategic marketing process informed by the Coca-Cola system. Qualitative market research using the ZMET® approach with 12 young Swazi women (ages 15-24) informed the communications strategy. Participants shared their challenges and aspirations related to HIV prevention via images they provided.

Results: Young women described how the confluence of financial instability, gender norms, peer pressure, and a desire to be loved made them vulnerable to HIV. Yet, they aspired to be strong women, empowered to withstand life's pressures, and sought safe spaces where they could access services and non-judgmental support. These market research findings were used by a creative agency to develop the Girl Champ brand to reach AGYW. Interviews with 19 key stakeholders described broad receptivity to the market research findings, noting the power of the methodology to capture AGYW's experiences and needs. Participants from the public sector highlighted a sense of ownership over the strategic marketing process, and appreciated the 'wide step consultations' to implementation. Girl Champ inspires AGYW to access health information, wellness activities and support in a safe girls-only environment during clinic-based events. In November 2018, the intervention was piloted in three clinics attracting 1,936 AGYW (exceeding the expected attendance of 750) for health services.

Conclusions: Public-private sector partnerships may be uniquely positioned to develop, deploy and evaluate novel demand creation interventions that are based in market research and resonate with local communities. Private sector principles of engagement and alignment may facilitate more inclusive local ownership over the process. Approaches that emphasize health and wellness ("gain-framing") vs. targeted risk-framing may have more resonance with youth. The Girl Champ brand fits within this emerging paradigm, and has potential in other settings where AGYW face similar challenges

Abstract Title: Project Last Mile in Mozambique: Applying Private Sector Solutions and Data Analytics for Sustainable Supply Chain Management (SCM) in the Public Health Sector

Presented at: Global Health Supply Chain Summit, 2019, Johannesburg, South Africa

Authors: Jose Neves, James Flood, Emily Cherlin, Sarah Christie, Erika Linnander

Context: Project Last Mile (PLM) is a global health partnership that leverages the logistics expertise of The Coca-Cola Company to improve distribution and availability of life-saving medicines throughout Africa. This presentation will focus on PLM's partnership in Mozambique with the Central Medical Stores (Central de Medicamentos e Artigos Medico, CMAM), supported by the Global Fund with technical guidance from Coca-Cola Beverages Africa (CCBA). The Yale Global Health Leadership Initiative (GHLI) has served as the Monitoring & Evaluation partner for PLM since its inception in 2010.

Motivation: Resilient supply chains are responsive to dynamic factors that influence distribution, including changes in demand and infrastructure, as well seasonal fluctuations. Geospatial tools and predictive analytics typically used for fast moving consumer goods (FMCG) may assist public supply chain agencies to plan optimized distribution routes, and build a central repository of location data which can be routinely updated. Despite the potential benefit of these private sector tools, there are limited examples of their practical application in supply chain agencies in the public health sector. PLM is supporting CMAM in 1. Routing optimization 2. Logistics Capability Building and 3. Outsourced Distribution to the last mile.

Methods: Using geospatial analysis and routing software from Frontline Research Group, PLM is planning optimized distribution routes for medical commodities in all provinces, while building CMAM capability to sustain this function. Data on the road network, health facilities, high-risk points of interest, and medical storage units, are collected during drive-time analysis to determine optimal distribution routes during seasonal variation and based on fleet availability. Yale employs mixed methods to track the key performance indicators for this work over time, and conducts field visits for qualitative assessments of the partnership via in-depth interviews with stakeholders.

Results: As of June 2019, route verification by drive time analysis was complete in six provinces [including one metro area] out of 11 total areas to be surveyed. PLM has confirmed and validated the locations of 809 out of 905 health facilities (89%) in the six areas where the road network has been fully mapped. Estimates from the six provinces where drivetime analysis were complete demonstrate that a transition from the current model [Provincial Stores to District Depots to Health Facilities] to direct distribution from Intermediary Warehouse (IWs) to Health Facilities will save \$535,593, an average savings of ~.50 per kilometer, from \$1.72/km for current model to \$1.22/km for revised IW model. Stakeholder interviews (n=20) held in April 2019 confirmed that the PLM partnership was instrumental in building this capability within CMAM, with strong technical expertise, trusted leadership, and accessible training.

Conclusions: Geomapping spatial software and analysis can be applied to optimize routes, plan vehicle usage, address seasonal variation, and save costs for the distribution of medical commodities in the public sector. Private sector expertise can be integrated into medical supply chain operations for sustainability through strategic partnership and data sharing.

Abstract Title: Project Last Mile in South Africa: Leveraging Private Sector Innovation and Route-to-Market Insights to Improve Access to Medications in the Public Sector

Presented at: Global Health Supply Chain Summit, 2019, Johannesburg, South Africa

Authors: Phil Roberts, Merlin Pillay, Sarah Christie, Erika Linnander

Context: South Africa is home to 7.1M people living with HIV and supports the largest antiretroviral therapy (ART) program globally. In addition, the burden of non-communicable diseases is growing, with an estimated 2.5M adults to be living with diabetes by 2030. This unprecedented demand for health services from the public sector requires innovation in how patients access medications in order to decongest health facilities and conserve resources for patients with acute needs. In response, the National Department of Health (NDoH) launched the Centralised Chronic Medicines Dispensing and Distribution (CCMDD) program in 2014 to provide stable patients with access to chronic medications (including ART) via community-based pick-up points. Pick-up points include fast lanes at clinics; adherence clubs; and external pick-up points, co-located in retail chains or private pharmacies.

Motivation: The private sector may have unique insights that can be leveraged to improve access to medications through route-to-market innovations and strategic support. Project Last Mile (PLM) is a global health partnership that shares the business acumen and best practices of The Coca-Cola Company to improve access and availability of life-saving medicines throughout Africa. This presentation will focus on PLM's partnership in South Africa, where PLM has served as the National Strategic Partner for CCMDD since April 2016, supported by USAID. In this partnership, PLM offers 1. Geomapping for strategic placement of pick-up points and targeted growth, 2. Route-to-Market Planning and Support: 3. Execution Support for CCMDD Expansion and 4. Private Sector Engagement for innovative pick-up point solutions.

Methods: The Yale Global Health Leadership Initiative (GHLI) serves as the Monitoring & Evaluation (M&E) partner for PLM, and applies mixed methods to assess the outputs and impact of the partnership over time. Yale monitors CCMDD enrollment as part of its evaluation for PLM. Cumulative data on CCMDD uptake [i.e., patients enrolled, facilities registered, and pick-up points established] are maintained on a secure portal, and downloaded for analysis. Qualitative assessments conducted annually via in-depth interviews with key stakeholders contextualize these metrics. This presentation will focus on the expansion of CCMDD since the partnership began, and highlight critical facilitators of the work.

Results: Between April 2016 and April 2019, all 46 participating health districts were mapped, and 3,344 health facilities [92%] were registered with CCMDD. A total of 1,059 external pick-up points were established since the partnership began. Currently, 1,688,487 patients have active prescriptions on CCMDD, with 62% on ARVs; 11% with comorbidities; and 27% on other chronic medications. Innovative modalities including Smartlockers and Container Dispensaries are being piloted in the CCMDD programme, with PLM's support. Interviews with stakeholders (n=23) confirm that PLM provides an indispensable bridge between the private and public sectors, to negotiate distinct organization cultures and find common ground in solutions that maximize patient benefit. PLM has been consistently credited as a catalyst for CCMDD expansion by coordinating diverse stakeholders; applying business analytics; and fostering innovation.

Conclusions: A growing number of patients are accessing chronic medications, including ART, through CCMDD. Furthermore, demand is on the rise for external pick-up points, which mitigate opportunity costs for patients and further decongest facilities. This signals potential for expanding this differentiated service delivery model with private sector support in similar settings.

Abstract Title: If it's Not Cold, It's Not Sold.” Leveraging a Private Sector Service Network to Improve Cold Chain Uptake and Vaccine Availability in Lagos, Nigeria

Presented at: Global Health and Innovation Conference, Unite for Sight, 2020, New Haven, Connecticut

Authors: Adeola Ayedun, Sarah Christie, Rudi Lensley, Rushika Shekhar, Katherine LaMonaca, Emily Cherlin, Erika Linnander

Background: Nigeria faces challenges maintaining cold chain equipment (CCE), limiting safe storage and availability of vaccines. Project Last Mile (PLM) is a public-private partnership that leverages expertise from The Coca-Cola Company to strengthen health systems in Africa. In Nigeria, PLM worked with Lagos State Primary Health Care Board (PHCB) and the National Primary Health Care Development Agency (NPHCDA) to train technicians based on a Nigerian Bottling Company (NBC) curriculum on CCE maintenance.

Methods: PLM engaged NBC's local cold-chain service provider, Frigoglass, in a 6-month pilot of an outsourced model of CCE preventative maintenance and repair of 362 CCE in 15 local government areas in Lagos State, where 34% of CCE were non-functional. We assessed impact using a mixed-methods longitudinal design.

Results: PLM trained 8 NPHCDA engineers, who then trained 121 technicians. Frigoglass returned 134 non-functional units to service and provided preventative maintenance for 359 CCE units (99% uptime). Interviews with 12 stakeholders revealed critical aspects of Frigoglass capacity and service models that were most relevant for public sector partners, including contracting mechanisms and operating definitions as prerequisites for outsourcing, valuable on-the-job knowledge exchange between Frigoglass technicians and health facility staff during service visits, and early signs of a shift toward a “maintenance mindset” in the public sector. Cost data from the pilot can inform future CCE procurement as well as advocacy for continued outsourcing of CCE maintenance.

Conclusions: Public-private partnerships may be uniquely positioned to broker effective, cost-efficient models for outsourced maintenance in settings where weak CCE infrastructure prevents adequate immunization coverage.

Abstract Title: Project Last Mile and Girl Champ: The Impact of Private Sector Marketing Expertise on Demand for Health Services Amongst Adolescent Girls and Young Women (AGYW) in eSwatini

To be

Presented at: 23rd International AIDS Conference, 2020, San Francisco, California [virtual]

Authors: Sarah Christie, Marie Brault, Amanda Manchia, Khabonina Mabuza, Leslie Curry, Erika Linnander

Background: In 2018, eSwatini had the highest HIV prevalence globally, with 27.3% of adults living with HIV. New HIV infections in young women quadruple those in young men (aged 15-24 years). Context-driven interventions that target adolescent girls and young women (AGYW) for HIV prevention and services are lacking. The private sector has potential to drive demand by leveraging strategic marketing processes that successfully engage youth with multi-national brands. Project Last Mile (PLM) shares expertise from The Coca-Cola Company to strengthen public health systems in Africa. In eSwatini, PLM worked with the Ministry of Health to co-create Girl Champ (GC), an aspirational brand and community-mobilized response where AGYW can access information, support, and wellness activities in a girls-only environment during clinic-based events. The COACH curriculum was developed for clinic staff to provide youth-friendly care and reinforce messaging.

Methods: Yale applied mixed methods in a longitudinal evaluation to assess the impact of PLM. Specifically, we assessed stakeholder experiences with implementing Girl Champ in Manzini, through 16 qualitative interviews and 547 feedback surveys. We also tracked attendance at GC events, and quantified the proportion of those in attendance who were new to care and reached overall during activations. Data were abstracted from the Clinic Management Information System (CMIS) to explore pre-/post trends in AGYW health service utilization and HIV testing in two facilities where electronic data were available.

Results: In November 2018, Girl Champ was piloted in three clinics attracting 1,722 (vs 750 target) AGYW for participation, reaching 19% of AGYW from participating tinkhundla (municipalities). Seventy-three percent (n=1,236) were newly registered for health services during GC events. Analysis of CMIS data showed no statistically significant improvements in number of facility visits or HIV Testing and Counseling (HTC) visits among AGYW at GC-experienced clinics over time. Feedback from AGYW participants was positive, and interviews with key stakeholders described collective ownership, feasibility and endorsement for this approach.

Conclusions: Public-private sector partnerships may be uniquely positioned to develop and implement novel demand creation interventions with significant reach to potentiate linkage to care. Interventions that emphasize health and wellness (“gain-framing”) vs. targeted “risk-framing” may have more resonance with youth, particularly adolescents.

Abstract Title: Project Last Mile in South Africa supports a national differentiated service delivery (DSD) model for integrated disease management and improved access to antiretrovirals (ARVs)

To be

Presented at: 23rd International AIDS Conference, 2020, San Francisco, California [virtual]

Authors: Sarah Christie, Lingrui Liu, Phil Roberts, Merlin Pillay, Erika Linnander, Mayur Desai

Background: South Africa is home to 7.7 million people living with HIV and supports the largest antiretroviral therapy (ART) program globally. Non-communicable diseases threaten public health accounting for 51% of mortality. Despite global investment in HIV and the parallel threat of NCDs, there are few examples of integrated programs that leverage resources to tackle both. In 2014, the National Department of Health (NDoH) launched the Centralised Chronic Medicines Dispensing and Distribution (CCMDD) program to provide patients on antiretrovirals (ARVs) with differentiated access to medications via community-based pick-up points. The program expanded to include other chronic diseases, including diabetes and hypertension, and co-morbidities. The study aims to describe the national expansion of CCMDD, and to examine the profile of CCMDD patients over time.

Methods: Yale monitors CCMDD enrollment as part of its mixed methods evaluation for Project Last Mile (PLM), the National Strategic Partner for CCMDD since 2016. Yale has conducted four annual waves of qualitative data collection to understand stakeholder experiences with PLM. Cumulative data on CCMDD uptake [i.e., patients enrolled, facilities registered, pick-up points established] as well as where patients collect their medications [from external pick-up points (PuPs); adherence/outreach clubs; or facility-based fast lanes], and what they collect [ART only; Chronic only; and ART- Chronic] were extracted for analysis.

Results: As of October 2019, 3,436 health facilities were registered across 46 health districts with 2,037 external PuPs established. A total of 2,008,172 patients were active on CCMDD, including 76% collecting ART [64% ART only, 12% ART plus Chron]; 479,120 [24%] were collecting for chronic diseases only, which significantly expanded since November 2018 ($p < .05$). Further, 734,005 (37%) of patients were collecting from external PuPs, a 73% uptick from 2018. The greater availability of external PuPs correlated with growth of patient selection of external PuPs over time ($p < .01$). Stakeholders confirmed that expanding the program to patients with NCDs destigmatized uptake, and credited PLM with external PuP expansion.

Conclusions: A growing number of patients are accessing medications via CCMDD, and a significant proportion have NCDs. As external pick-up points increase, demand improves. This signals potential for expanding this integrated differentiated service delivery model in similar settings.

