



Minimizing COVID-19 disruption: Ensuring the supply of essential health products for health emergencies and routine health services

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Summary

Leveraging economies of scale and scope through multi-country pooled procurement enables countries to increase access to quality affordable essential medicines and supplies that meet priority health objectives as well as effectively respond to health emergencies. Strategic partnerships and tools can minimize supply chain disruptions and streamline procurement and deployment in health emergencies, thus mitigating stockouts and ensuring cost efficiencies across various therapeutic areas, including for public health programs at a time when countries may struggle to meet complex needs. As a means to better respond to health emergencies while maintaining priority public health programs, countries should optimize usage of pooled procurement mechanisms facilitated by multilateral technical cooperation and other regional mechanisms, such as the Pan American Health Organization's Strategic Fund. Because few analyses have assessed the role of such regional procurement mechanisms, this Health Policy paper evaluates the key areas of impact of the PAHO Strategic Fund and concludes with lessons learned to help prepare for future health crises while maintaining essential health services.

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Introduction

When the first cases of COVID-19 began spreading across the Americas, countries in the region rushed to respond. By June 2020, Latin America and the Caribbean (LAC) was already considered a hotspot, with almost a third of the world's COVID-19 deaths.¹ While the region began to see falling rates during the following months, confirmed cases spiked again at an alarming pace. Less than a year later, COVID-19 had affected all 56 countries and territories in the Americas, topping 65 million cases and over 1.6 million deaths, and counting.² Meanwhile, priority public health programs addressing other diseases, ranging from tuberculosis to malaria to hypertension, have struggled to maintain response capacity as leaders shifted focus to respond to the pandemic. For example, one early report detailed that HIV testing services were reduced in two-thirds of countries due to COVID-19.³

Given the severe impact on public health and economies across the region, countries have developed and implemented strategies to mitigate the varied effects of COVID-19, including to reduce indirect morbidity and mortality.⁴ Policymakers and public health practitioners have emphasized the need to ensure continuous availability and affordability of quality medicines and supplies to control the pandemic while at the same time supporting the provision of essential health services to respond to the health needs of populations and minimize financial hardship.⁵ Longstanding gaps in regional solidarity to address health crises – such as effectively securing and coordinating the allocation of lifesaving resources, mitigating supply chain barriers, and maintaining fair and equitable access to COVID-19 health products – demonstrated the urgent need to scale up regional support mechanisms that could deal with these emerging challenges.

It is in the dual priority areas of emergency response to COVID-19 and the maintenance of routine health services and priority health programs that regional technical cooperation can play a critical role. The Pan American Health Organization (PAHO), the leading international health

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agency for the Americas, was uniquely positioned to support its Member States to holistically respond to the pandemic. Specifically, this paper outlines how the PAHO Strategic Fund (officially named the PAHO Revolving Fund for Essential Medicines and Strategic Public Health Supplies) managed to successfully help mitigate COVID-19 related supply chain disruptions and major stockouts – while continuing its existing work to improve demand forecasting, support quality assurance and primary health care, and ensure affordability of medications to maintain health services. Notably, this mechanism differentiates itself in its ability to secure a variety of long-term agreements (LTAs) with pre-contracted suppliers, locking in affordable prices that are often significantly less than what may otherwise be available for the same medicines and supplies; this ensured sustained accessibility of critical health products throughout the crisis.

Assessing the unique and timely steps the Strategic Fund took to support the COVID-19 response offers essential lessons on how to best leverage pooled procurement mechanisms and multilateral partnerships across countries to mitigate health crises, while continuing to support national and regional progress towards health for all in the coming years.

Improving access to medicines and supplies

The Strategic Fund, established in 2000 to address critical gaps in access to medicines and health supplies for priority health programs in the Americas Region, has since been leveraged by Member States to “expand access to quality health care while strengthening the sustainability of health systems”.⁶ The mechanism supports a variety of disease programs, including HIV/AIDS, tuberculosis, malaria, diabetes, neglected tropical diseases, cardiovascular diseases, and hepatitis C.⁷ By September 2021, the Strategic Fund had signed participation agreements with 50 countries, territories, and public health institutions, and directly provided treatments and diagnostic tests for 90 million people between 2018 – 2021.⁶

As of 31 December 2020, the Strategic Fund had facilitated access to more than \$235 million in essential medicines and public health supplies for 25 countries throughout the COVID-19 crisis. Since then, it has also supported over 33 million people with \$263 million worth of COVID-19 related products including critical care medicines, personal protective equipment (PPE), and diagnostic tests.^{6,8}

While other international procurement agencies can offer important benefits for the region, including the delivery of humanitarian and infrastructure-related products, they are often unable to provide the wide range of comprehensive, supplementary technical support services that PAHO’s Strategic Fund can, given PAHO’s role as the chief public health agency in the Americas and its established history of partnering with ministries of health and

public health institutions across LAC. This includes being able to offer guidance for the rational selection and use of drugs, supporting quality assurance, and helping navigate regulatory policies. In addition, the Strategic Fund plays a unique role by integrating the diverse technical departments and expertise housed across PAHO to streamline support for Member States. This allows the Strategic Fund to provide a comprehensive suite of services, from planning to procurement and delivery of essential medicines and supplies, rather than fragmented or isolated efforts which may cause further challenges and undermine efficiency.

The Strategic Fund differentiates itself from other procurement mechanisms by delivering on five key areas: technical cooperation, pooled procurement, capacity-building, quality assurance, and innovative financing. Critically, each of these functions is underpinned by the core value of solidarity across countries in the region, which contributes to the overall success of the Strategic Fund.

Technical cooperation

In contrast with other mechanisms, the PAHO Strategic Fund distinguishes itself through long-standing partnerships with technical experts, national and regional authorities, and suppliers. The mechanism works closely with ministries of health, social security and public health institutes, and a diverse set of manufacturers both in the Americas Region and beyond. Critical to this is the continuous communication and rigorous consultations facilitated by the Strategic Fund between technical experts and country partners to provide robust and evidence-based recommendations, updated guidance on what to procure and why, and context-specific insights to improve access to public health goods. In addition, the platform bridges relationships between other multilateral initiatives through the World Health Organization (WHO), the Global Fund for AIDS, Tuberculosis, and Malaria (GFATM), the Global Drug Facility (GDF), and UNICEF, amongst others. As a result, the Strategic Fund can negotiate lower prices, offer more diverse products, and build off the work of regulatory authorities to ensure access to quality-assured essential medicines and products. In 2020, the mechanism had collectively negotiated 105 LTAs for medicines and 104 LTAs for diagnostic kits, while offering over 410 different types of products.⁶ A recent study by Steiner et al. asserted that because of robust overlap between countries’ National Essential Medicines Lists (NEML) and those with a negotiated price through the Strategic Fund lists, the mechanism “may be influential in its intended goal of helping countries to improve access to some medicines” while helping to make medicines for both communicable and non-communicable diseases more affordable.¹⁰

This level of technical cooperation played a critical role in mitigating the effects of COVID-19. The

Strategic Fund leveraged in-house technical expertise, working closely with the Incident Management Support Team (IMST), technical programs, and experts in quality control, thus supporting technical consultations with countries based on local stock situations, availability of donations or loans, review of treatment protocols, and national formularies. For example, one large country in the region that had conventionally relied on domestic producers for intubation kits was unable to keep up with demand and quality requirements during the pandemic; the Strategic Fund successfully secured and helped deliver additional, quality-assured kits on behalf of the Member State.

Furthermore, the Strategic Fund, through open communication with Member States, enabled regional visibility of surplus stocks that could be shared between countries, thus facilitating horizontal donations and loans of lifesaving medicines and supplies across borders.⁸ The Strategic Fund leveraged economies of scale to ensure affordability for COVID-19 related intensive care medicines, diagnostic tests, and PPE. By fostering solidarity and Pan-American cooperation across the region, PAHO supported the efficient and equitable lending of needed products, strategic policy guidance, new technologies, and peer-sharing and learning. In turn, this supported millions in the Americas to sustainably “meet their health needs during COVID-19 without the risk of preventable diseases going untreated,” such as sustaining HIV antiretrovirals and tuberculosis medications.⁵

Pooled procurement

PAHO’s Strategic Fund is notably expansive in its list of suppliers, as it sources from diverse manufacturers and distributors not just across the Americas Region but internationally as well. This level of international sourcing, totalling 109 distinct suppliers between 2017 – 2020, allows the mechanism to identify quality suppliers with the best value for money and timely deliveries. For example, by leveraging economies of scale and facilitating the introduction of generics, the mechanism has helped to bring down the price of antiretrovirals sourced through PAHO by up to 97%.⁶ Furthermore, the Strategic Fund consolidates demand across all participating countries and territories, thus helping to lower transactional costs (e.g., legal, financial, procurement/shipping-related expenses). This includes minimizing quality assurance-related expenses by centrally ensuring certified producers rather than obliging each country to separately manage assurance expenses. The Strategic Fund can leverage economies of scale to ensure affordable costs for challenging public health issues, which is a particular issue when addressing noncommunicable and chronic diseases. For example, the HEARTS Initiative covers approximately 6 million people across twelve countries in the region to manage cardiovascular

diseases, including hypertension and diabetes.⁹ The Strategic Fund has been successful in reducing the cost of the cardiovascular medicine Amlodipine in certain countries, by up to 99% through its LTAs.¹⁶

The effective management of an expansive, flexible, and trusted pooled procurement mechanism through a multilateral agency like PAHO allowed the Strategic Fund to make important strides in securing diagnostics, therapeutics, PPEs, and biomedical devices in support of PAHO’s COVID-19 emergency response. By liaising with the ACT-Accelerator partners and distributors across diverse networks, the mechanism could better evaluate and utilize safety stocks to avoid unnecessary stock-outs, expenses, or late fees.¹¹ Other efficiencies were achieved through transparent sourcing and open bidding processes facilitated by WHO, thus leveraging economies of scale and partnerships (e.g. collaboration with the World Food Programme for transportation and importation services). This had the added benefit of ensuring equitable access for countries based on demographic, technological absorption capacity, and epidemiological factors rather than just the social-economic status of the country.

As an example, the pandemic demonstrated that time was limited to coordinate supply provisions, with stockpiles of PPE and related products largely absent in countries at the outset of the pandemic. Middle-income countries were hit particularly hard from both sides, as they often had limited supplies domestically but were simultaneously priced out internationally while not being eligible for donations. The Strategic Fund was part of the coordination mechanism for PPE, diagnostic kits, and biomedical devices for many of these Member States, helping them secure needed resources based on the robust and equitable allocation basis described earlier. This ensured all countries could access their fair share – while protecting against the monopolization of supplies by high-income countries in the region. This was done in close collaboration with the WHO Supply Chain System, GFATM, UNICEF, among others.

Finally, consolidated demand planning through collaboration with PAHO technical units allowed for better distribution, such as via the PAHO Regional Warehouse of Donations housed in Panama, which jointly supplied \$16.2 million worth of treatments and vector control supplies for neglected tropical diseases including chagas disease and leishmaniasis.

Capacity building

Rather than solely relying on existing supply chains, the PAHO Strategic Fund has facilitated integration among different priority health programs to strengthen in-country supply chain management. This includes leveraging and expanding inventory management systems to better track inventory and stockouts, supporting interagency initiatives to train local staff in supply chain

management concepts and demand forecasting project tools (e.g., QUANTMET, QUANT-TB), and coordinating with diverse stakeholders to better prevent shortages, delays, and wastage across all therapeutic areas.

During the COVID-19 pandemic, the Strategic Fund was rapidly mobilized to assess the inventory situation across the region, working closely with procurement staff, program specialists, and national health authorities to examine existing supply needs. Furthermore, the Strategic Fund leveraged established relationships with suppliers to better plan shipments under current LTAs to assure supply availability and mitigate price inflation, thus further developing an expanded array of supply chain options that afforded countries much-needed flexibility. Finally, the mechanism coordinated with PAHO's procurement and supply management specialists to evaluate alternative modes of transport (i.e., air freight versus ocean freight) to adapt to the most cost-effective and timely methods amidst continuously evolving supply disruptions related to COVID-19.⁸ This included direct negotiations with suppliers to absorb increases in freight costs, leveraging internal credit lines to advance procurement processes, and liaising with The World Bank, Inter-American Development Bank, GFATM, and others in the utilization of new and reprogrammed funding to mobilize COVID-19 support and address supply disruptions for priority programs.

Quality

PAHO leverages WHO prequalification as well as the capacity of reference National Regulatory Authorities (NRAs) in the Americas and Stringent Regulatory Authorities (SRAs) to support its work in quality assurance. PAHO continuously assesses international guidance and evidence on medicines, diagnostics, medical devices, and vector control products to update and maintain the Strategic Fund's diverse product portfolio. As a result, qualitative criteria and recommendations for all items included in the Strategic Fund lists are made in alignment with existing public health frameworks through continuous technical cooperation to ensure products are well-suited for the contexts they are being procured for. Notably, the Strategic Fund has one of the most comprehensive lists of essential medicines and public health supplies offered in the Americas Region. In addition, Steiner et al.'s review found that the Strategic Fund's Medicines List included a greater variety of medicines than any of the NEMs throughout LAC, and even recommended adapting NEMs to the Strategic Fund list.¹⁰

Through the definition and application of eligibility criteria, and in alignment with standards to ensure safety, quality, and efficacy, essential health products are continuously offered to countries through the PAHO Strategic Fund. By ensuring rigorous WHO standards are met in the quality assurance of products

and eligibility of suppliers, PAHO can optimize the safety and efficacy of products offered while mitigating against the risk of substandard or counterfeit products across all priority health programs. As part of its COVID-19 response, the Strategic Fund ramped up coordination to ensure access to quality, safe, and efficacious products, facilitating robust quality reviews while streamlining processes in the face of emerging needs, such as for intensive care medicines related to COVID-19, in vitro diagnostics (IVDs), and PPE.

Innovative financing

Another unique element of the PAHO Strategic Fund is its provision of credit lines for participating entities to draw from when necessary. This form of innovative financing ensures that while Member States continuously work to scale up domestic financing for health, a flexible option is available to maintain their commitments to routine and emergency health services during times of crisis. Every purchase order includes a nominal percentage of the total cost of goods that feeds into a capital account, which is used to enable Member States to procure critical products through interest-free loans for up to two months if required.

Recent analyses have demonstrated that this is an enormously beneficial feature of the Strategic Fund, especially during COVID-19. As of December 2020, the PAHO Strategic Fund had extended almost \$39 million in lines of credit from the capitalization account to countries, with a cumulative utilization rate of 150%ⁱ; this indicates that funds have been actively reassigned to support countries that require short-term financial support. Of note, the authors of this paper were unable to find any other pooled procurement mechanism in the LAC region with a comparable level of flexible financing support for needed medicines and health supplies. This highlights the added value of a solidarity-based mechanism like the PAHO Strategic Fund, where participating countries agree to contribute towards a shared pool of funding that can be made available to any participant entity in the pooled procurement mechanism; it is a critical element to maintaining access to lifesaving health technologies.

A way forward

The COVID-19 pandemic has exposed the vulnerabilities and challenges that countries face in ensuring access to medicines and public health supplies when responding to health emergencies and priority program needs, especially in a context where essential health

ⁱ Cumulative utilization is calculated by dividing the total cumulative amount of credit extended to Member States during the fiscal year by the closing balance of the Capital Account of that same fiscal year.

services have been severely disrupted. While this crisis has been overwhelming for many health systems and societies, it also represents novel opportunities for innovation and collaboration through international cooperation.

By the end of 2020, not only was the Americas the most impacted region in terms of COVID-19 mortality, but an 8% decline in gross domestic product (GDP) fueled an economic crisis across LAC.¹² The precarious economic outlook and faltering responses in the region will further challenge fiscal capacity to maintain existing social protection programs and health service provision, including access to essential public health products. Multi-country pooled procurement mechanisms such as the Strategic Fund provide an important opportunity for countries to source quality affordable medicines and supplies by leveraging key tools, such as innovative financing, regional and global partnerships, specialized technical cooperation in disease control and management, and expertise in quality assurance, capacity-building, procurement, and supply chain logistics. In line with these components, the PAHO Strategic Fund offers an important and timely solution for countries to strengthen health systems responses in health emergencies while consolidating critical health products and maintaining access to essential health services.

Notably, models like the PAHO Strategic Fund provide additional unique value propositions, including integrating diverse technical expertise – from health-care policy and regulation, public health program management, supply chain operations, public administration, and financial management. This translates into positive direct and indirect impacts through extensive multistakeholder engagement, strategy development and implementation, planning, deployment, monitoring, and evaluation. Critical to all of this is the core value of solidarity, indispensable to support both emergency response and priority health programs.

In terms of communicable diseases, the Strategic Fund has had a long history of success, helping procure over \$235 million in communicable disease medicines and health supplies between 2017 – 2020 for the region. These partnerships were put to test during COVID-19, where the mechanism stepped in to facilitate donations of key antiretrovirals from Panama and Brazil to support Jamaica, which was struggling to manage lengthy delays in shipments due to the pandemic.¹³ Furthermore, the Strategic Fund was quick to respond to shortages of chloroquine in Belize and Panama for malaria response, leveraging the PAHO Regional Warehouse of Donations to facilitate rapid response and delivery.¹⁴ Steiner et al. noted that the Strategic Fund list was unique in actively offering essential medicines for Hepatitis C, pneumonia, and toxoplasmosis, which are critical to addressing wider issues in public health.⁸

In the area of non-communicable diseases, the PAHO Strategic Fund also offers much promise. The mechanism is already unique in offering critical treatments for chronic illnesses, including hypertension, cancer, diabetes, and mental health conditions. Related research has indicated that leveraging the Strategic Fund's technical cooperation and effectiveness in pooled procurement may “lead to improvements in measurable health outcomes and ultimately better the health of people in the Americas”.¹⁰ This will be vital if countries are to feasibly achieve their priority health objectives and SDG commitments, as well as ensure universal access to health – especially as non-communicable diseases currently account for 81% of total deaths in the region.¹⁵

It is clear that all stakeholders in the region – including PAHO, countries, and diverse partners – were not fully prepared for the complexity of the COVID-19 pandemic. However, this served as an important learning opportunity for the entire region. The crisis enabled the PAHO Strategic Fund to learn important lessons to better prepare itself and the Member States it supports for the next pandemic or public health crisis. The mechanism has seen firsthand how vital it is to ensure medical supplies and treatments are available at all stages of a health emergency and has been revitalized to better prepare supply chains in the region to be more resilient and sustainable. As part of this effort, PAHO recently launched the Regional Platform to Advance the Manufacturing of COVID-19 Vaccines and other Health Technologies in the Americas to expand regional manufacturing capacity so countries are not entirely dependent on suppliers outside of the LAC region or constrained by challenges in the supply chain. This initiative can ensure a concrete focus so the wide range of health products available through the Strategic Fund are firmly embedded in preparedness, response, and recovery plans.

In addition, for countries and territories across LAC to truly capitalize on the PAHO Strategic Fund, more data is needed on specific areas that the mechanism has excelled in, and where further improvements can still be made. Critically, diverse stakeholders that could benefit from the mechanism should provide further input on key gaps they are experiencing for essential medicines and routine health services, thus identifying priority areas for focus (e.g., affordability, quality assurance, efficiency of supply chains). These should be expanded in further research and analyses that can strengthen regional pooled procurement mechanisms.

Conclusion

Given both new and emerging trends in health systems strengthening across the Americas – and in preparation for a post-pandemic era – calls for the development of adaptable global health supply chains

and interoperable public health services will only grow louder. Responding to PAHO Director Dr Etienne's appeal for countries to "re-engineer how essential care is delivered and invest in the first level of care," national leaders and public health stakeholders should invest in important multilateral pooled procurement mechanisms like the PAHO Strategic Fund to offer an innovative path forward towards more sustainable, integrated, and resilient health systems, both in the Americas Region and around the world.⁸

Contributors

AL, CL, and GA conceived of the original concept and structure, AL led the original drafting with major inputs from GA. CL and JF provided key edits to strengthen the manuscript, and all authors reviewed and approved the final draft.

Declaration of interests

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