

BUILDING RESILIENT SEXUAL AND REPRODUCTIVE HEALTH SUPPLY CHAINS DURING COVID-19 AND BEYOND

Community Roadmap for Action
and Technical Findings

APRIL 2021

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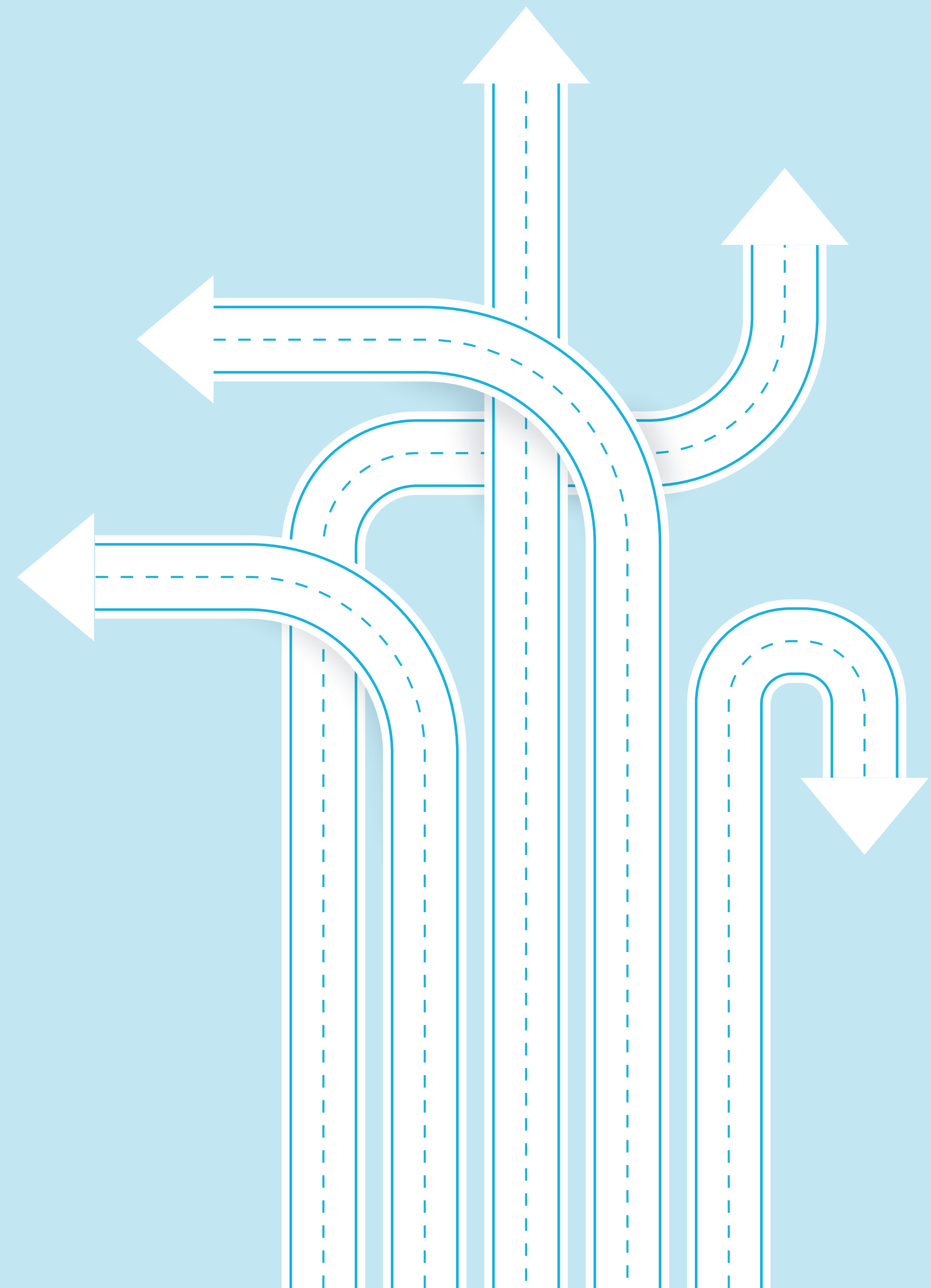
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ACKNOWLEDGEMENTS

An unprecedented year

It has been said many times that 2020 was an unprecedented year – the COVID-19 pandemic disrupted normal life around the globe and resulted in tragic loss for many. Yet, in many ways, 2020 also represented the best of human resilience – our collective ability to overcome challenges, to solve problems, and to find ways to keep on going and maintain our commitments. The disruptions caused by COVID-19 also presented an opportunity to reflect, learn, and adapt in many areas of life. RHSC and JSI embarked on this assessment to learn from the data and to hear from experts to do just that – to understand what about our supply chains helped ensure continuity of SRH products and services and identify what we could do better moving forward. What did we already know that this crisis confirmed or exacerbated and what new challenges and promising adaptations emerged? This was a journey to understand and catalog the experience and end-to-end supply chain effects of the pandemic, as well as the collective knowledge and problem solving of the community who cares so deeply about continuous access to SRH products and services.

We are profoundly grateful to the more than 50 individuals working across the SRH supply chain who spoke to us, giving their time, data, expertise, and thoughtful viewpoints in the spirit of learning, sharing, and improvements for all. We are thankful for support for this work from the Bill & Melinda Gates Foundation and a deeply engaged Advisory Group who provided guidance, input, and direction at key milestones along the way: Ayman Abdelmohsen, Alan Bornbusch, Mary-Ann Etiebet, Maryjane Lacoste, Nancy Muller, Peter Stephens, John Townsend, and Prashant Yadav. We are thankful to the Ministries of Health and data collection teams in Ethiopia, Kenya, and Zambia, whose insights provided the context necessary to understand the effects at the last mile of supply chains. We would also like to recognize and thank the health care workers and supply chain professionals around the globe who persisted amidst uncertainty, setbacks, and personal risks to ensure products and services continued to be available wherever patients and clients sought them.



EXECUTIVE SUMMARY

Introduction

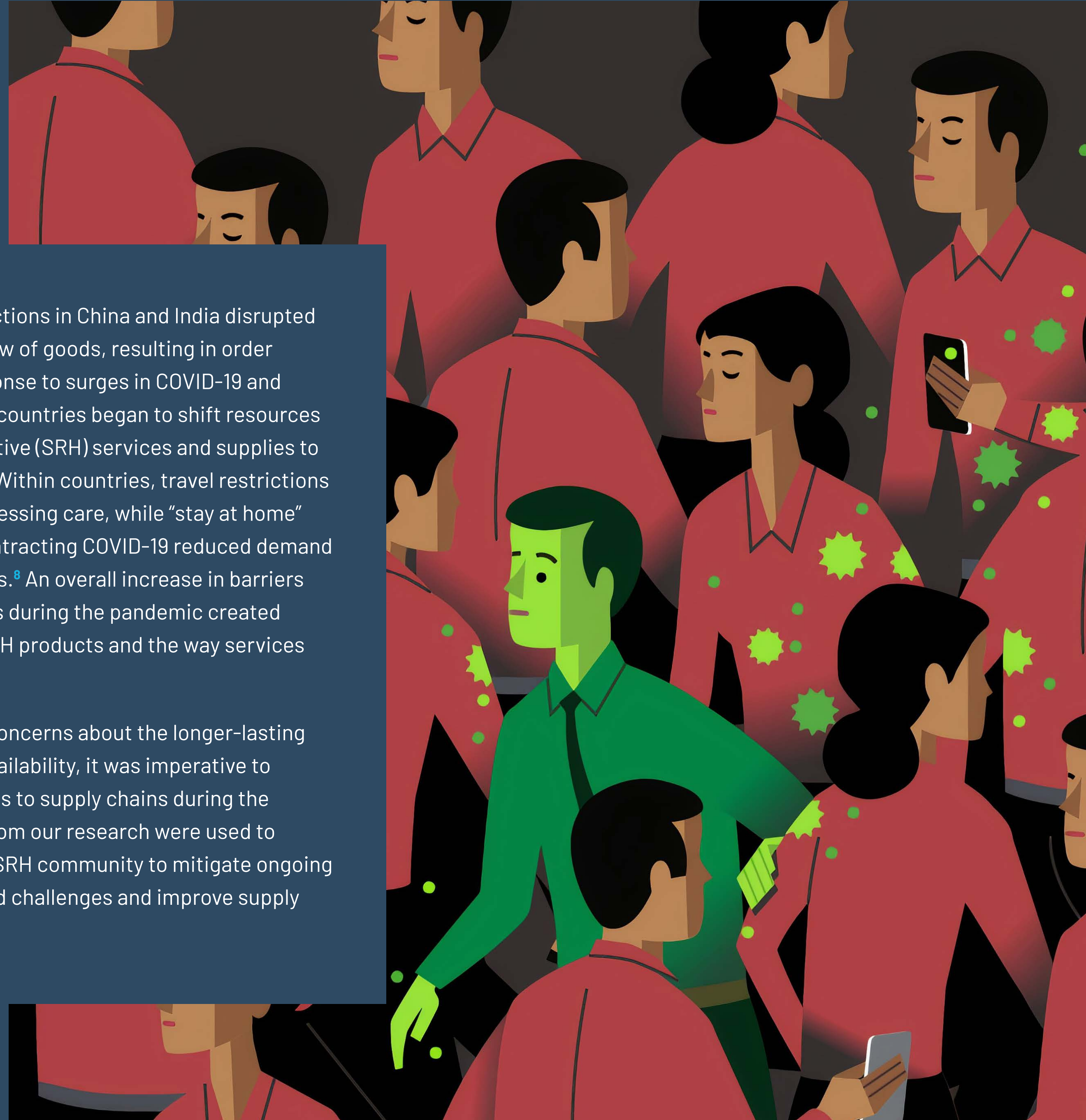
Following the identification of coronavirus disease 2019 (COVID-19) in the Chinese province of Hubei in December 2019, governments worldwide enacted stringent measures to help prevent and manage its spread. The response to what the World Health Organization (WHO) would later declare a pandemic required global supply chains to make rapid adjustments to the new needs and demands of an upended world. The strains caused disruptions at all functional levels of the supply chain including manufacturing, freight and logistics, procurement, health systems, and service delivery.

System-level efforts to limit COVID-19 transmission, including widespread transportation closures and workforce reductions, exacerbated manufacturing challenges and created an atmosphere of uncertainty that spurred panic buying and hoarding in the early days of the pandemic.^{1,5}

Rapid changes in freight operations, including a sharp drop-off in passenger flights (which carry freight as belly cargo and use passenger ticket fares to subsidize costs for cargo), air/port closures, and lockdowns affected all modes of freight and made transport of goods more expensive and uncertain.

Policy changes and restrictions in China and India disrupted manufacturing and the flow of goods, resulting in order fulfillment delays. In response to surges in COVID-19 and supply chain uncertainty, countries began to shift resources from sexual and reproductive (SRH) services and supplies to the pandemic response.⁷ Within countries, travel restrictions created challenges to accessing care, while “stay at home” messaging and fear of contracting COVID-19 reduced demand for in-person SRH services.⁸ An overall increase in barriers to accessing SRH services during the pandemic created changes in demand for SRH products and the way services were accessed.^{11,12}

Given this backdrop and concerns about the longer-lasting effects of SRH product availability, it was imperative to understand the disruptions to supply chains during the pandemic. The findings from our research were used to create a roadmap for the SRH community to mitigate ongoing COVID-19-related risks and challenges and improve supply chain resiliency overall.



EXECUTIVE SUMMARY

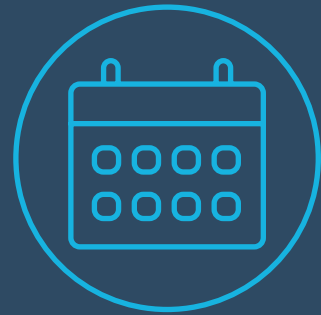
COVID-19 disruptions created “ripple effects” across all supply chain functions



COVID-19 has disrupted all aspects of the supply chain. However, manufacturing, logistics and systems (including policies and procedures) were most affected and are at continued risk as the pandemic and recovery continue.



The pandemic highlighted the interdependency between supply chain functions and how disruption in one area can significantly disrupt another.



Within 2–4 months, most companies and organizations had resumed operations, albeit with new constraints. Within this time:

- Implementation of adjustments and new procedures to resume operations allowed people to resume work safely.
- Despite disruptions in the global flow of goods, data from six countries showed no “unusual” changes in stock levels or stockouts; delays in shipments were mitigated by higher stock levels during that period.
- Decreased demand for services in the crisis management period rebounded to pre-COVID levels.



EXECUTIVE SUMMARY

What we learned in 2020 will inform future SRH supply chains



Despite early disruptions and a diminished focus on SRH products relative to personal protective equipment (PPE), systems and supply chains were able to respond because of:

- Focused global attention on SRH products and donor responsiveness to increased costs that supported continuity in the flow and availability of products.
- Long and full pipelines for SRH products; most funding for 2020 procurement had already been committed and was part of firm purchase orders.
- Higher inventory levels plus short-term drops in demand that offset delays in global shipments, port closures, extended clearance times, etc.
- National policies that prioritized health services and included SRH as part of essential package of services and products.
- Human resiliency and problem solving that yielded adaptations and shorter disruptions.



But 2020 did highlight key weaknesses and risks to our SRH supply chains:

- Health supply chains are global; even products manufactured locally rely on material inputs from China and India. The geographic concentration of active pharmaceutical ingredients (APIs) and finished pharmaceutical manufacturing is a risk to global supply chains.
- Freight will not return to pre-COVID levels anytime soon. It will be more expensive and offer fewer options for years to come, becoming a bigger driver of cost and risk throughout the supply chain.
- Higher inventory levels, while frequently cited as inefficient, were in fact protective, compensating for weak systems, long procurement cycles, and data lags and gaps, showing that movement towards more lean practices may increase risks.
- The SRH community's commitment to choice requires understanding and responding to a variety of client needs, which may shift to different products or to any type of outlet, especially during a crisis.
- The provision of PPE and COVID-19 vaccines will remain a high priority for countries and could threaten the relative priority attached to SRH products and services in the coming years.

EXECUTIVE SUMMARY

The crisis is now, but the aftershocks will continue for several years. Complacency is a risk.

To promote resiliency, the SRH community needs to implement strategies that address:



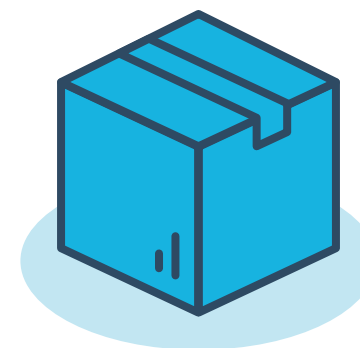
HEALTHY MARKETS

Product-specific market weaknesses and limited supplier diversity in numbers, products offered, and locations endanger product availability and client choice.



FINANCING

Increased product and freight costs, coupled with growing demand for COVID-related products (PPE and vaccines), jeopardize sustained public sector funding for SRH products and potentially the viability of the private sector SRH market.



SUPPLY CHAIN STRATEGY

The logistics environment has changed. Supply chain gains will be threatened if they return to pre-COVID strategies without rethinking sourcing, inventory, freight, and distribution systems and channels for products.



STEWARDSHIP, POLICY AND COORDINATION

Pandemic-related disruptions have made supply chains top-of-mind for many. Now is the time for public and private sector partners to actively commit to coordinated efforts to broaden equitable and reliable access to SRH products.



BETTER QUALITY AND USE OF DATA

Data weaknesses persist, even amidst the growth in electronic systems. COVID-19 has highlighted the need for more robust data systems that allow for rapid, informed decision-making and collaboration along the supply chain.

The SRH community should coordinate efforts across global and national level actors to support the following efforts to improve resiliency for SRH supply chains, and ultimately ensure continued widespread availability of SRH products:

HEALTHY MARKETS



Promote healthy SRH product markets by category and product

- Improve visibility into suppliers' supply chains to assess risks for specific products and product categories
 - Coordinate and share data across organizations to identify magnitude of risks and prioritize strategies to promote sufficient redundancy in the supplier base
 - Understand true risks and resilience opportunities of local and regional manufacturing for specific SRH product segments

FINANCING



Secure sustainable SRH product and supply chain financing

- Forecast and fund PPE requirements to safeguard SRH services through the pandemic
- Assess funding gaps for SRH products and supply chains caused by reallocation to COVID response; mobilize required funding
- Assess opportunities for financing interventions to incentivize non-public distribution and provision of SRH products

SUPPLY CHAIN STRATEGY



Promote flexible and responsive supply chain strategies related to sourcing, inventory, freight, costs and risk

- Develop dynamic network models that allow ongoing analysis of the relative cost/risk of different scenarios related to warehousing, inventory, and distribution
 - Update sourcing and procurement strategies to minimize supplier risk
- Monitor impact of ongoing pandemic as well as COVID-19 vaccine rollout on SRH supply chains

STEWARDSHIP, POLICY, AND COORDINATION



Safeguard SRH supply by strengthening enabling environment, coordination

- Continue to elevate SRH so that relevant supply chain considerations are part of health policy design, strategy, and system decisions
- Strengthen mechanisms that support collaboration and whose scope can be expanded during supply chain disruptions
 - Develop and expand multichannel access points to support client choice and broader service provision

BETTER QUALITY AND USE OF DATA



Accelerate flow, access and use of data along SRH supply chain

- Strengthen systems to capture and promote availability of quality data to the last mile, improving data velocity
- Enhance systems' use of data and technology to more rapidly sense changes in demand and support rational redistribution of products
- Expand data systems to include private sector, maternal health, other non-FP products in order to better monitor and inform interventions to increase access in all sectors



BACKGROUND & METHODOLOGY

Context

At the onset of the COVID-19 pandemic, the demand for critical medical supplies like PPE spiked while the ability to manufacture and ship goods around the globe was severely disrupted.¹ Both sea and air freight became scarcer and more expensive. Border closures, lockdowns, and export restrictions in and around countries that supply both non-COVID and COVID-specific commodities made it challenging to meet demand for many products.^{2,3} Regions like sub-Saharan Africa that import 70–90% of their medical commodities faced supply shortages as plants in major API-manufacturing countries like China, India, and Taiwan sat idle.^{1,4} Concerned about the impact on SRH products specifically, RHSC convened a call in April 2020 with representatives from manufacturers, procurers, governments, donors, and implementing partners. Each shared their challenges as the scope of the pandemic unfurled: suspended manufacturing operations, difficulty sourcing products, rapid price increases for both goods and freight, and increases in both lead times and uncertainty around expected delivery dates and ability to fulfill orders.

Travel restrictions within countries created additional challenges to the distribution of supplies. Client access and demand for in-person SRH services were affected by these restrictions and by widespread “stay at home” messaging and fear of contracting COVID-19 reduced demand for in-person SRH services.⁸ The closure of static and mobile clinics made it more challenging for women and girls to access SRH information and services.⁹ In a WHO survey of 105 countries, 68% reported disruptions to family planning (FP) and contraceptive services.¹⁰ Marie Stopes International estimates that 2 million women and girls across its 37 member countries lost access to contraception and abortion services during the first half of the pandemic.¹¹ These increased barriers to SRH services during the pandemic created changes in demand for both SRH products and types of service delivery that varied from country to country.^{11,12}

While there was significant media attention to disruptions in global supply chains and speculation that services were constrained because of supply shortages, there was little evidenced-based understanding of how the pandemic was affecting SRH supply chains and product availability.



68%

In a WHO survey of 105 countries, 68% reported disruptions to family planning (FP) and contraceptive services.



BACKGROUND & METHODOLOGY

Rationale for this work

The COVID-19 pandemic has created acute disruptions to public health supply chains, revealing underlying vulnerabilities in the global supply ecosystem and increasing uncertainty in both the supply and demand of life-saving SRH medicines and products.

A crisis of this magnitude demands that we understand what worked well, what did not, and how best to plan for the future.

The concept of supply chain resilience combines elements of risk planning and agile management to respond to disruption and recover quickly; examining and adjusting supply chains accordingly allows us to improve supply chain performance today and be better equipped to manage future disruptions.

The Reproductive Health Supplies Coalition, with technical support from JSI, conducted a six-month exercise to move from anecdote to evidence to rapidly assess constraints to SRH product availability because of the COVID-19 pandemic. We used the findings from this analysis to create a community roadmap to prioritize practical actions for overcoming current acute challenges, while promoting greater supply chain resiliency and SRH community coordination in the longer term.

This work is intended to help the SRH community better understand

- Supply chain disruptions resulting from the COVID-19 pandemic in 2020.
- The effects of these disruptions on SRH supply chains.
- Actionable solutions to improve SRH product supply chains.



BACKGROUND & METHODOLOGY

Framework

We applied the following framework to guide our work and data collection:

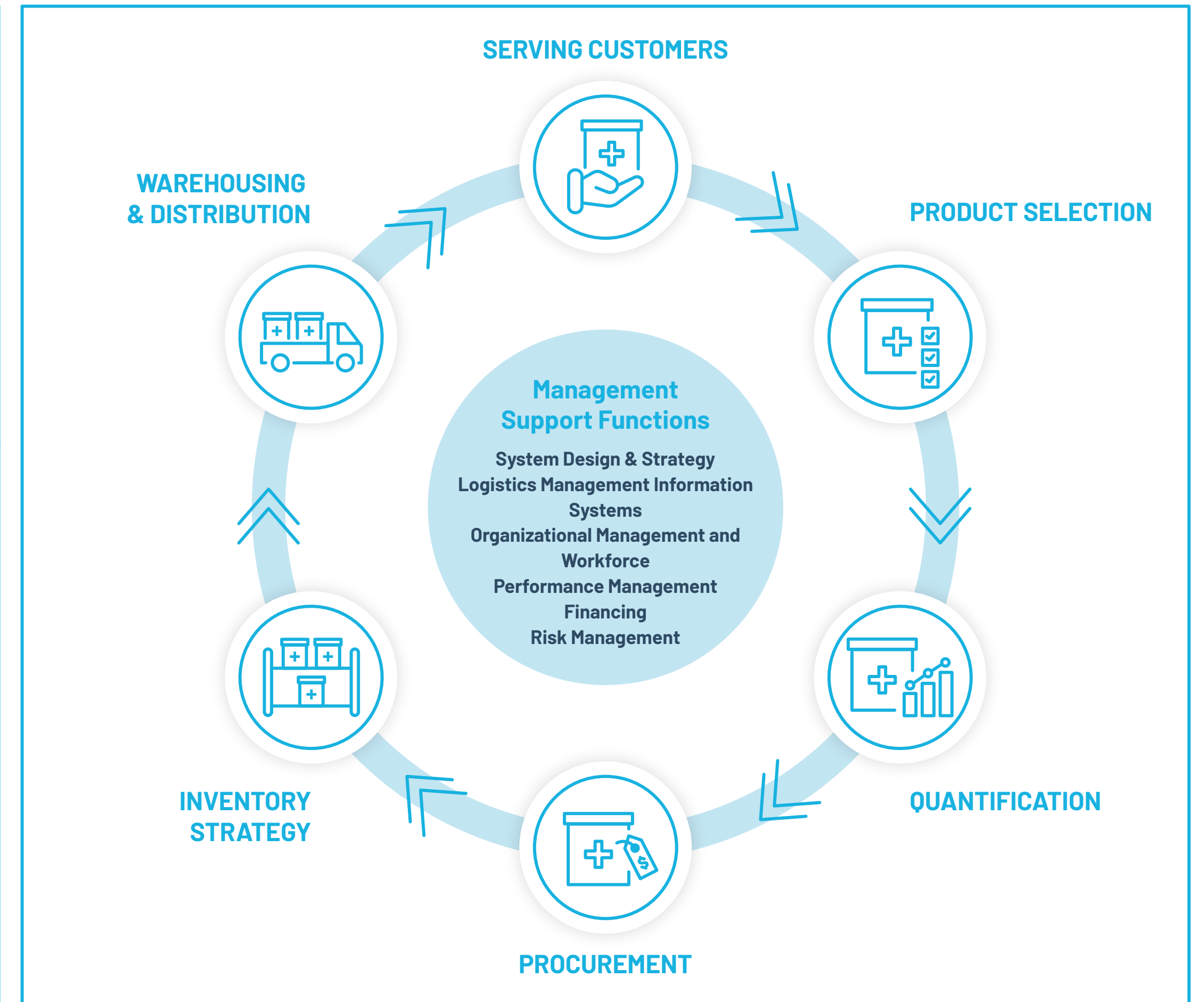
- **Supply chain levels and players** (e.g., global [API production, manufacturers, donors], national [MOH, procurers, distributors], and subnational [service delivery points, retail, etc.].)
- **Supply chain management components** (e.g., manufacturing, procurement, logistics, service delivery, systems policies, data, etc.), and supply chain strategy.)
- **Product segments** (pharmaceutical, non-pharmaceutical, sourced internationally or regionally/locally.)

The data collected for each element were used to identify the weaknesses, disruptions, and dependencies to inform solutions that promote systemic change.

LEVELS AND PLAYERS



SUPPLY CHAIN COMPONENTS





BACKGROUND & METHODOLOGY

Methodology

Data collection and analysis were collaborative and opportunistic. We leveraged existing data, including public data sources, partner surveys, key informant interviews, and other relevant inputs.

We conducted a rapid assessment of supply chain disruptions caused by COVID-19 and their effect on SRH supply chain performance and commodity availability. The assessment focused on globally and locally sourced SRH pharmaceutical and non-pharmaceutical products. The full list of products considered within scope for this work is in Appendix A.

Quantitative Data

We assessed and compared key SRH supply chain performance indicators from two periods of time: 1) before the onset of COVID-19 (January 2019–early 2020); and 2) during COVID-19 (March 2020–October 2020). Data were collected from global and national data sources, including DHIS II/ health management information system, electronic logistics management information system (eLMIS), and data

or key performance indicators from a variety of supply chain actors. At the country level, data collection efforts focused on three countries: Kenya, Ethiopia, and Zambia. Data were also considered from publicly available eLMIS systems in Bangladesh, Indonesia, and Pakistan, but without the benefit of qualitative data or key informants to contextualize the information. The full list of indicators and data provided is available in Appendix B.

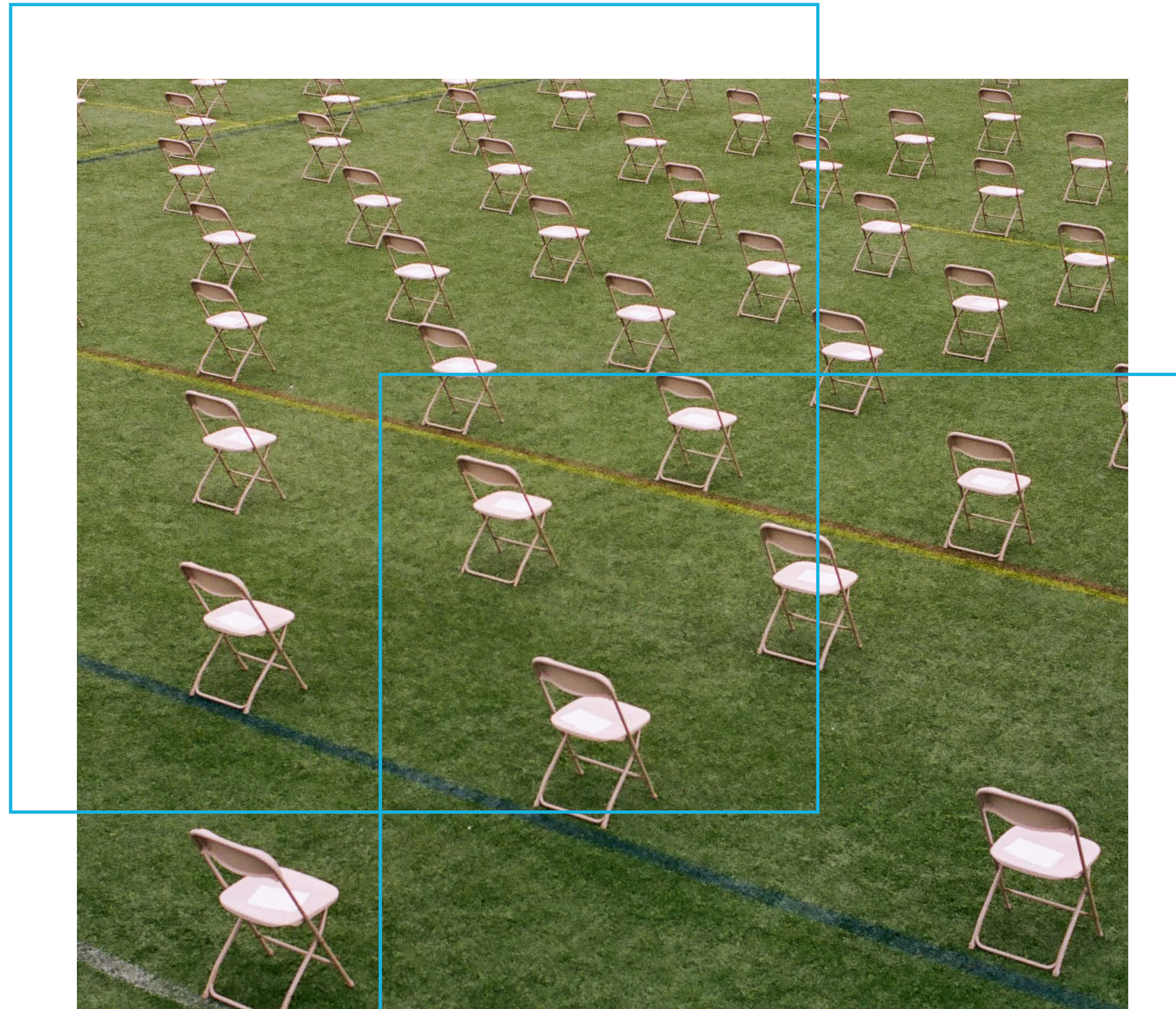
Qualitative Data

The research team interviewed 53 key informants at the global and country levels to better understand the drivers of COVID-19 disruptions, their consequences, and how health systems and communities have responded. Key informants included global manufacturers, donors and procurers, freight forwarders, social marketing organizations (SMOs), wholesalers, implementing partners/agencies, representatives of MOH and other government agencies, country-level program teams and logisticians, private sector actors, retail pharmacy representatives, and others.

We conducted country-level interviews in Ethiopia, Kenya, and Zambia. In Ethiopia, some interviews were conducted in Amharic then translated and transcribed into English. The resulting transcriptions were uploaded into Nvivo, a qualitative analysis software, and coded using thematic inductive and deductive codes such as procurement, coordination, financing, and technology. The research team analyzed and synthesized the coded data by generating descriptions by theme to understand the depth and breadth of evidence in each functional area of interest. The resulting descriptions were reviewed and summarized into the findings.

Limitations & Caveats

The bulk of the data that informs this work was collected August–October 2020 and represents that moment in time. As the pandemic continues to affect policies, populations, and supply chains, we extrapolate from the 2020 data to assess future risks and other potential sources of disruption.



Data limitations:

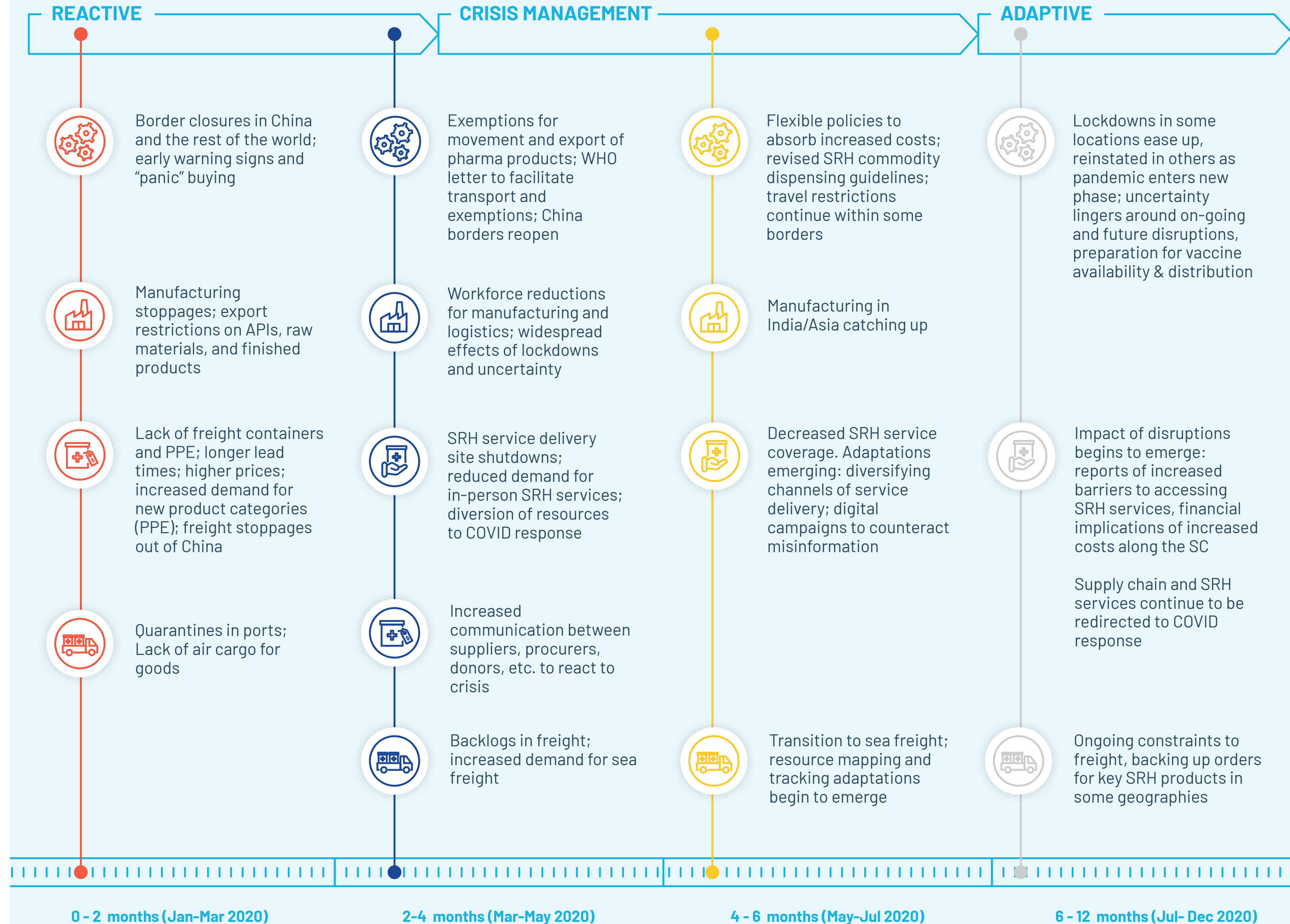
- Stock level and consumption data are limited to six countries.
- Countries for data collection were selected based on data availability, including existence of electronic information systems.
- There were limited inputs and sources for routine data for maternal and menstrual health products.
- Limited private-sector data were available publicly so findings rely heavily on input from key informants.
- Quantitative data collection was more difficult than anticipated, and of the 20-plus indicators requested from each country, only a few were routinely collected by all three national electronic information systems. There were inconsistencies in availability of data on supply chain level, time periods available, categories, and products covered, hindering cross-country comparisons.

FINDINGS

Global Timeline

The 2020 timeline of COVID-19-associated events and responses can be divided into three main periods, with effects across both time and geography.

- **Reactive** - initial identification of and rapid, uncoordinated response to COVID-19 (and associated precautions), characterized by sudden changes, uncertainty, and confusion, nationalistic responses, and tendency toward self-preservation.
- **Crisis management** - shift to mitigating strategies and policies, increased communication and coordination, governments and organizations working to resume operations within new constraints.
- **Adaptive** - period of rapid adaptation to new constraints and general recovery, amidst ongoing adjustments, new waves of the pandemic, and continued efforts to limit disease transmission.

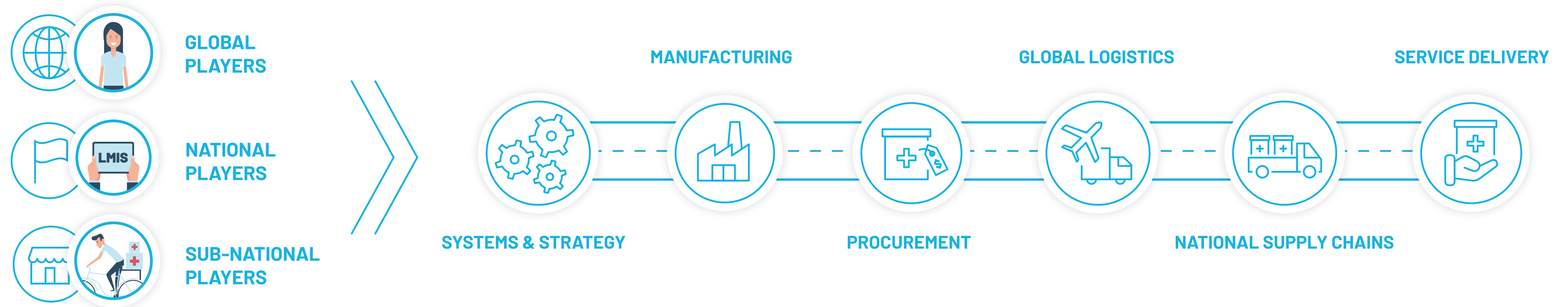


FINDINGS

Common Themes and Functional Areas

In this section, we present the main findings based on input from key informants and logistics data, starting with our primary indicator of interest: product availability. This is followed by the functional areas within our framework that help explain those outcomes: systems and strategies (including cross-cutting factors like policies, governance, and financing), manufacturing, procurement, global logistics, national supply chains, and service delivery. These findings highlight the most significant disruptions and their impact on other functions. They also provide evidence for how the pandemic has affected SRH availability during COVID.

- COVID-19 has disrupted all aspects of the supply chain. Manufacturing, logistics and systems (including policies and procedures) were most affected, based on scope, magnitude and ongoing risk of disruption.
- The pandemic highlighted the interdependency between supply chain functions, revealing how disruptions in one area can significantly disrupt another.



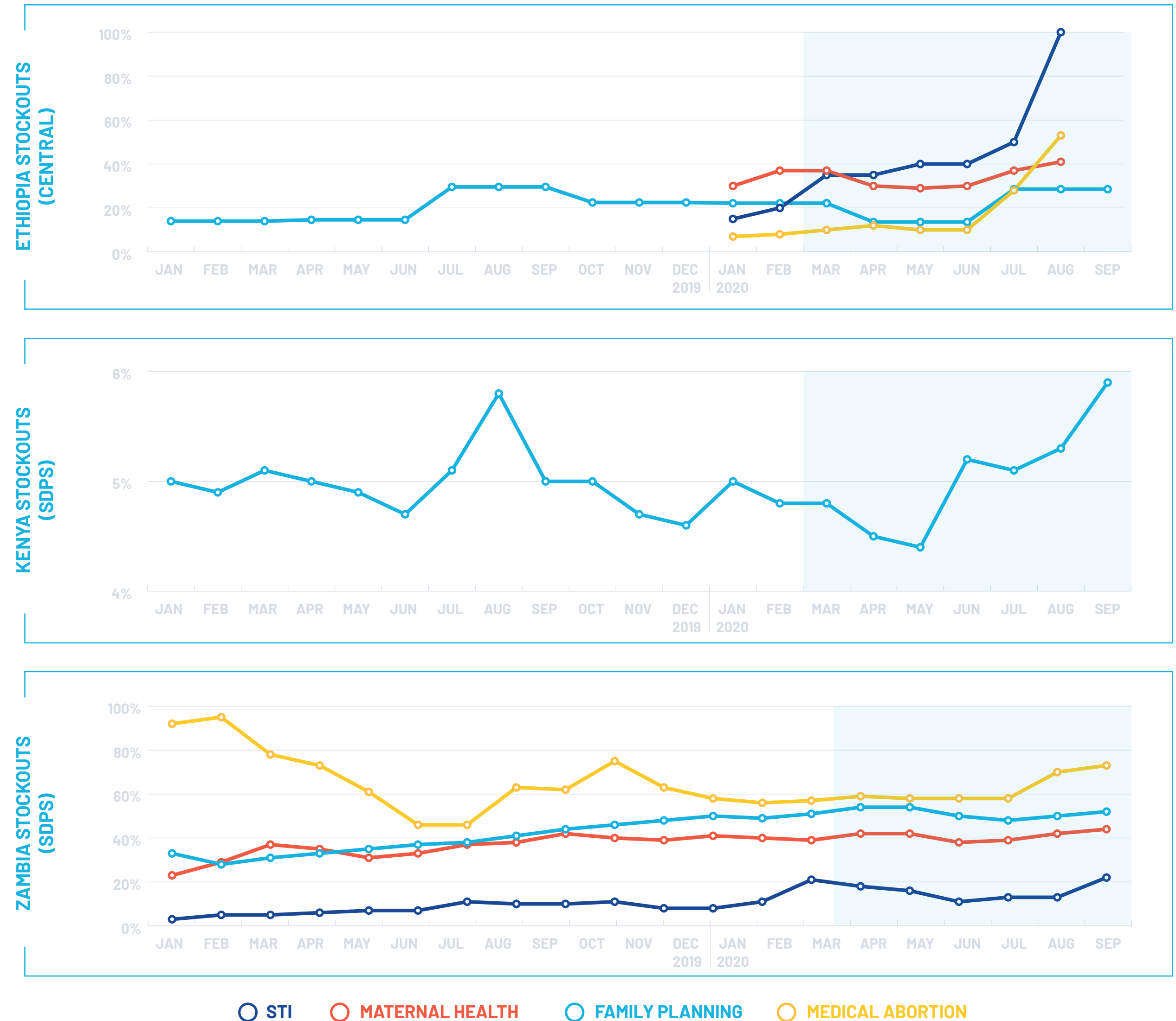
FINDINGS // PRODUCT AVAILABILITY

Stockouts related to COVID-19 disruptions were largely averted in the early months, but appeared to rise toward the end of 2020

Despite perception and anecdotal information to the contrary, analysis of regional distribution hub- and facility-level data from our three focus countries indicated that stockout rates were generally no higher during the acute crisis management period (Mar–May) or adaptive period (June–August) in 2020 than in periods preceding the pandemic.

Looking at stockout data by country and product category month by month from Jan 2019 through Aug/Sept 2020 suggests that stockouts decreased or stayed in line with previous rates for many of the programs in the three countries.

For example, stockouts decreased or remained consistent with previous rates in Ethiopia's FP program and maternal health program, Zambia's MA program, and Kenya's FP program. However, toward the end of our analysis period, we observed an upward trend in stockouts for most product categories in Ethiopia and Zambia. This upward trend toward the end of 2020 may represent an ongoing risk, but given the historical variability in stockout rates, it is not certain if these increases in July–Sept 2020 are related to COVID-19 disruptions.



FINDINGS // PRODUCT AVAILABILITY

Stockout data for FP by country and method also show limited COVID-19 related effects

To better understand the main product drivers of stockouts, we analyzed specific FP methods for each country. Similar to findings across programs, this analysis showed limited COVID related effects.

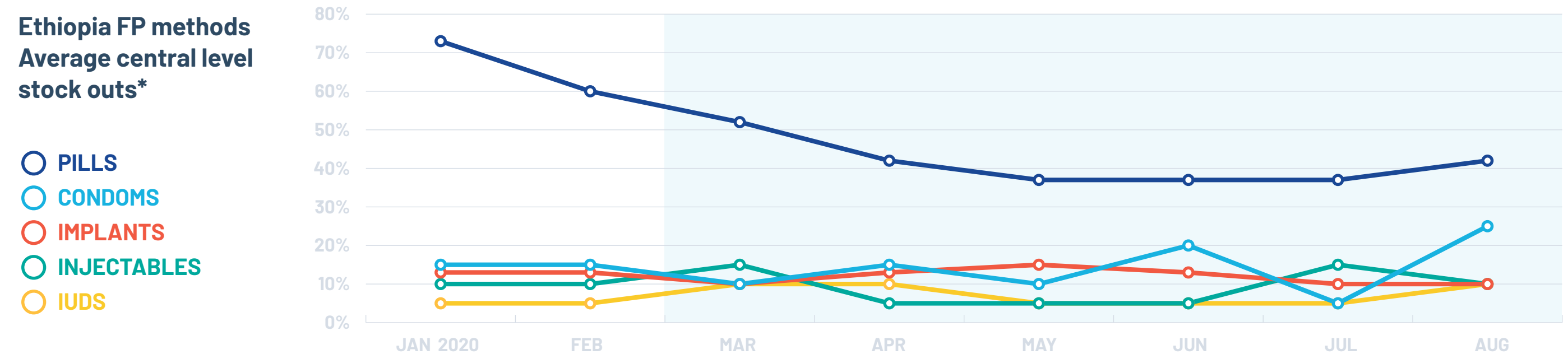
Increasing rates of stockouts were also evident for products that had had global shortages prior to the pandemic, such as implants and injectables, which makes attribution to COVID-19 difficult.

* Data for Ethiopia were available by method at central level for 2020 only; Hub level data was an aggregate for the whole category and not by method and could not be used here.

** Condom and IUD data was not available post May 2020

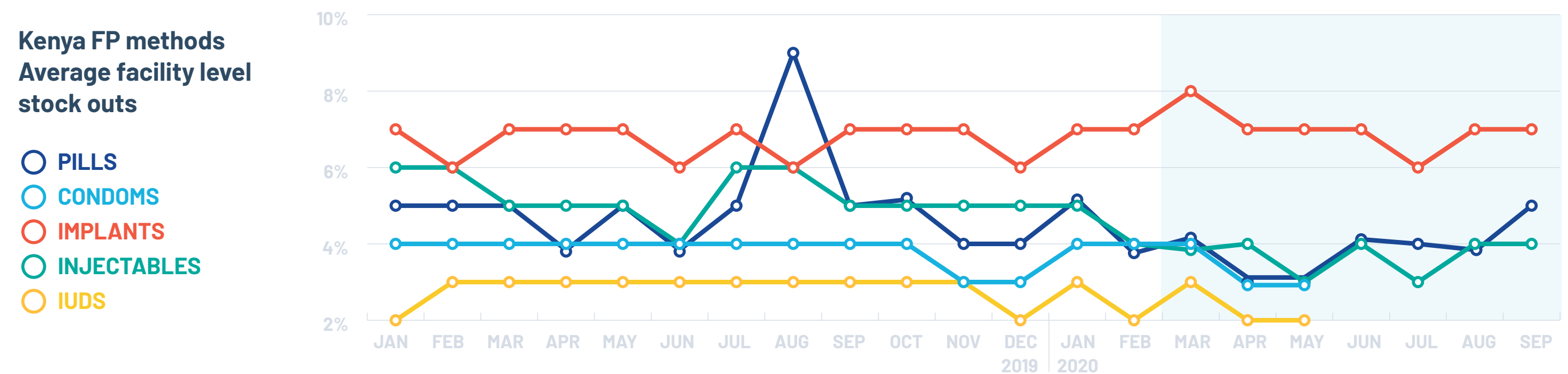
ETHIOPIA*

Stockouts increased for condoms in June and August 2020, implants in May 2020, and injectables in March and July 2020; the only method that had an average increase in stockouts during the pandemic period was the intrauterine device (IUD).



KENYA**

The percent of facilities stocked out of most family planning methods decreased after March 2020; changes were all within one standard deviation.

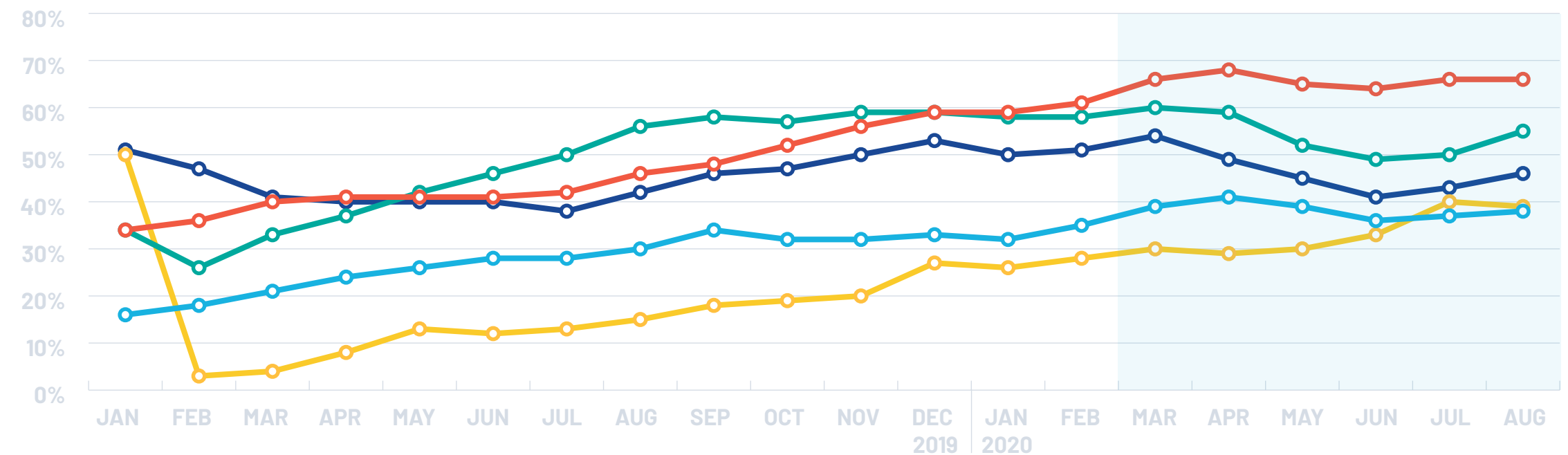
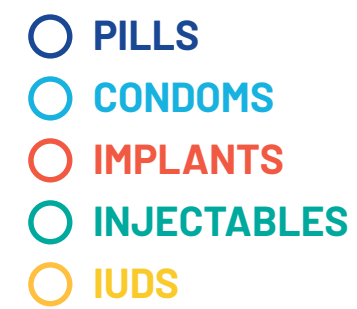


FINDINGS // PRODUCT AVAILABILITY

ZAMBIA

Overall, the percentage of stocked out level has been growing since 2019, prior to the pandemic; FP products are stocking out at higher rates than other categories, more so for long-acting than short-term methods, but informants confirmed this was largely due to supply and funding constraints.

**Zambia FP methods
Average facility level
stock outs**



NOTES ON DATA FOR GRAPHS ON PAGES 16-18

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- Stockout data represent averages of percentages of facilities stocked out across product category by month, except as noted for Ethiopia.
- FP category does not include cycle beads or supplies for sterilization.
- STI products include only HIV test kits from Ethiopia and Zambia; no STI product data from Kenya.
- Ethiopia FP data are at the regional hub (warehouse) level and were available quarterly (Jan '19–Sept '20); MH and medical abortion (MA) data were at central level and available Jan 2020–Aug 2020.
- Kenya data were at the facility level and available Jan 2019– September 2020.
- Zambia data were at the facility level and available Jan 2019–August 2020.

Page 17-18

- Stockout data represent averages of percentages of facilities stocked out across product category by month, except as noted for Ethiopia.
- FP category does not include cycle beads or supplies for sterilization; condoms include male and female for Kenya and Zambia; pills include combined oral contraceptive (COCs) and progestin-only pills (POPs); implants include 1-rod and 2-rod implants; and injectables include depot-medroxyprogesterone acetate-subcutaneous (DMPA-SC) and Net-en in Zambia and depot-medroxyprogesterone acetate-intramuscular (DMPA-IM) in all three.
- Ethiopia data were available for Jan–August 2020.
- Kenya data were available from Jan 2019–September 2020.
- Zambia data were available from Jan 2019–August 2020

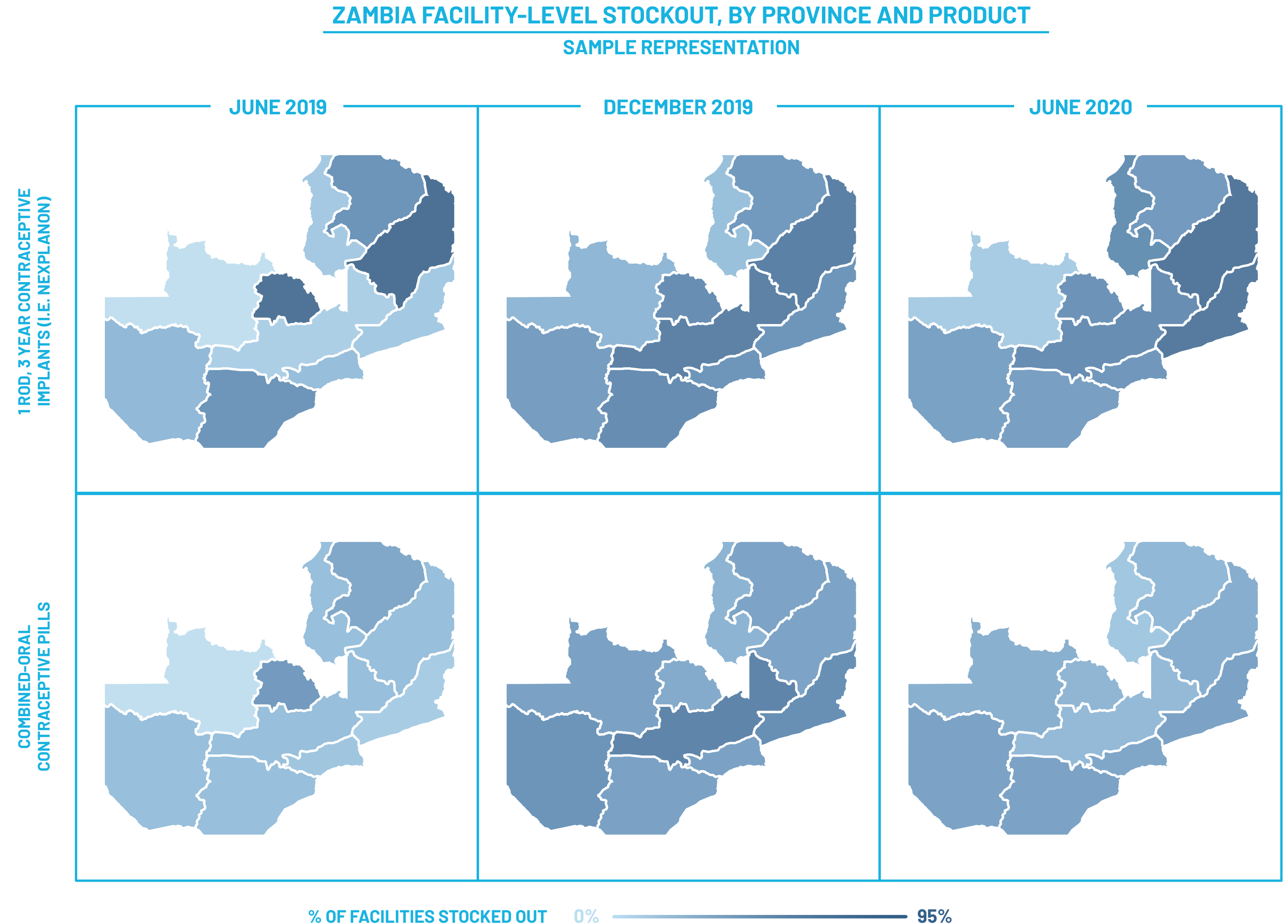
FINDINGS // PRODUCT AVAILABILITY

In terms of equity, there appears to be limited geographic variation in stockouts

Subnational data from Zambia and Kenya allowed for an analysis of regional variations, as a proxy for equity, to determine if some geographies were more likely to be stocked out than others.

The figure on the right is an example of such an analysis and shows no unusual trends observed during the crisis management period: regions that were more likely to be stocked out after March 2020 were also those that had had higher levels of stockouts in the past, indicating limited reason to attribute disruption to COVID-19 alone. Similarly, no geographic variations were seen for other products in Zambia or with Kenya data (not shown).

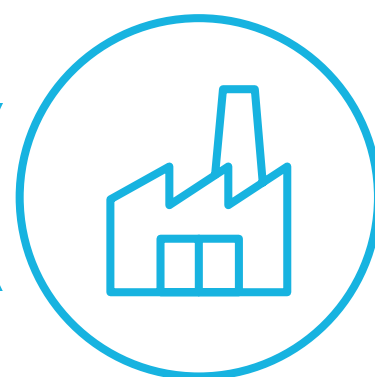
To understand the trends in product availability we looked at the movement of products through the supply chain from production to client.



FINDINGS // SYSTEMS AND STRATEGIES

Systems and Strategies: Key Takeaways

- **Lack of visibility into policy changes and restrictions created uncertainty.** It required high levels of one-to-one communication and the need to develop new ways of working together and sharing information.
- **Policy guidance from WHO and UN agencies helped overcome bottlenecks,** particularly around the movement of health products and the inclusion of SRH within essential services.
- **Funding availability and flexibility increased responsiveness,** particularly around the need to procure PPE and other supplies for infection prevention and control.



Systems and strategies were adapted rapidly to manage global disruptions caused by COVID-19

According to key informants, the early days of pandemic response were often characterized with words like “uncertainty,” “fear,” “Wild West,” and “restrictions.” The initial reactive period saw heightened efforts to establish new policies and guidelines, adjust programmatic priorities, and rapidly fund COVID-19 response efforts to resume operations.

Policy, Governance, and Response Coordination

The most common response to COVID-19 outbreaks in all countries was to restrict movement to reduce disease spread. This affected every aspect of the supply chain: manufacturing, shipping, customs clearance, warehousing, distribution, service delivery, and client demand. Limited information about the location of lockdowns, quarantines and testing protocols, coupled with unknowns over the movement of products introduced significant uncertainty to supply chain management and a need for greater coordination between organizations and actors. Many respondents cited additional time and effort communicating with partners to share information and find ways to continue supply chain operations for SRH products.

Opportunities were limited to share up-to-date information on national policies and strategize for a coordinated response. Where this was possible, the early focus was on emergency response. In many cases, organizations found themselves setting up their own data hubs. Over time, coordination mechanisms and enabling policies were developed that helped the flow of goods and information to resume and allowed governments to maintain or resume SRH services.

Examples:

- WHO guidance that helped countries with their reproductive, maternal, newborn, and child health response.
- WHO letter to facilitate global movement of essential health products.
- Freight forwarders sharing intelligence with supplier and procurement partners.
- UNFPA routine communication on supply and procurement status.

“Communication is so key right now. ...It seems like we’re having to communicate 10 times more effectively and check things out ahead of schedule to that nth degree right now.” - Freight forwarder representative

“Zambia was one of the first countries to start requiring truckers to be tested and have a proof of testing to come in. So in the very early days, truckers [from the distribution center in South Africa] hit the border and they weren’t tested. The decree [to require testing] had happened literally the day before, so we were able, through help with the WHO, to get the truckers in to make the deliveries that were desperately needed. Then they [Zambia] wouldn’t let them back out. I mean, crazy stuff like that was happening everywhere.” - Freight forwarder representative



Responsiveness was dependent on funding and data to react and adjust quickly

The need for governments, companies, organizations, and individuals to rapidly procure and ship large quantities of PPE and to ensure the safety of staff and populations added significant costs to operations and procurement. Many respondents mentioned immediate and longer-term funding shortfalls and pointed to the diversion of funds to procure COVID-19-related products and to cover added freight costs and distribution efforts.

While some reported passing these added costs along to clients, others absorbed them in the short run as the “price of doing business,” but noted that this was not a long-term option.

Responsiveness was also affected by the availability of information. Many supply chain actors spoke about the importance of data for decision-making and the risks of managing without it. For instance, guidelines suggested

that in preparation for long-term disruptions, governments and other customers should place orders sooner rather than later, yet few systems were equipped to rapidly sense and adjust to pandemic-related demand changes. This increased the risk of supply decisions being based on outdated trend information, which could exacerbate rather than prevent stock imbalances.

Conversely, advance warning of the pandemic allowed some organizations to take pre-emptive action. Some with operations in China, for example, quickly placed larger orders for products or inputs to build up inventory in anticipation of disruption.

“price of doing business”

While some reported passing these added costs to clients, others accepted them in the short run as the “price of doing business,” but noted that this was not a long-term option.

FINDINGS // MANUFACTURING

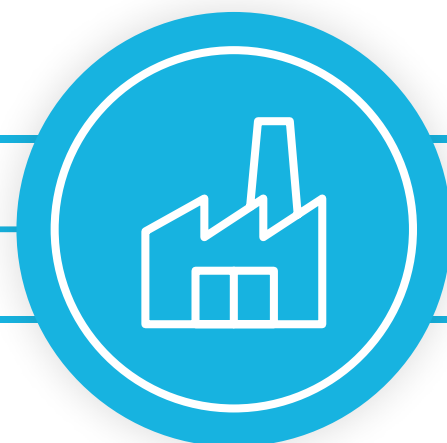
Manufacturing: Key Takeaways

- **Production was affected by the availability of input materials**, staff availability/safety, and initial policies restricting movement of people and export of goods.
- During the reactive and crisis management periods (Jan-April/May 2020), **heavy reliance on China and India for both inputs (API, key starting materials) and finished pharmaceutical products put most manufacturing (international and local) at risk** when supplies and shipping from these countries were disrupted.
- **Manufacturers faced increased costs and delays in production** as they adapted operations to a new work environment and limited production capacity; yet reductions in shipping options and travel limitations proved far more disruptive to operations.

- **Uncertainty around demand increased manufacturer risk;** for retail products, orders tended to shift/decrease due to cash flow concerns, prioritization of fast moving, high demand goods.
- **National policies and guidance proved key in ensuring continued production of priority health products;** these policies did not prioritize menstrual health products nor did they initially extend to ancillary materials.

"Yes, we are very, very globally oriented with our supply chains, and not just 'we' but in general the community. We get everything from everywhere and ship it to everywhere. But also there is broad vulnerability in that process."

- Manufacturer representative





FINDINGS // MANUFACTURING

Disruptions to API and finished goods manufacturing in China caused delays elsewhere

At the outset of the pandemic, lockdowns and disruptions in China affected manufacturing inputs and processes around the globe. European and Indian manufacturers described difficulties accessing key starting materials and API from China. An Indian API manufacturer described its challenges getting key starting materials, which hindered production of its API and finished pharmaceutical products.

Local manufacturers of non-pharmaceutical products said that even materials typically procured locally as components for or inputs to manufacturing were actually imported and subjected to similar shortages and delays.

Inconsistent and changing policies created confusion and disruption in the early months of the pandemic. Respondents indicated that national policies aimed at promoting continued manufacturing of priority products helped them to resume production. However, in many cases, informants reported that initial policies took time to develop and often focused on the movement of API and key starting materials, rather than ancillary materials like packaging, so disruptions persisted. Similarly, informants mentioned that menstrual health products were not classified as essential, creating supply chain barriers for these products.

confusion & disruption

Inconsistent and changing policies created confusion and additional disruption in the early months of the pandemic.



FINDINGS // MANUFACTURING

Manufacturers faced increased costs and delays to resume operations

Manufacturers made many efforts to establish and follow safety protocols at production sites. Infection prevention and control (IPC) measures were established in plants and facilities, including ongoing provision of masks and hand sanitizer. Regular COVID-19 testing of factory staff was implemented to keep production going, as was adding shifts with reduced staff, regular breaks for sanitization, and social distancing protocols.

Some manufacturers provided incentives for working longer hours, including on-site meals and lodging to both minimize risk of disease transmission and limit complications related to travel during lockdowns.

Manufacturers cited reduced shipping options and travel restrictions as significant longer-term disruptors to operations, thereby increasing costs and reducing transport options for both imports and exports. Further, backlogs in freight created build-ups of inventory and in some cases severe storage constraints.

Manufacturers also mentioned the additional administrative burden created by rapidly changing freight options, especially when physical signatures and approvals from multiple agencies and offices were needed.

“We are seeing so many instances wherein we have dispatched the goods, we have spoken to the freight forwarders, we have spoken to the airlines, and then as soon as the goods reach the airport authorities, they say ‘no space.’ Now, when you say no space [...] where do I store my goods now? If I want to take the goods back to my factory, [...] - there are almost six-to-seven government departments that need to be involved. You have to cancel the invoice, you have to write a letter to the bank saying why you were not able to get this foreign exchange for the country.” —Manufacturer representative



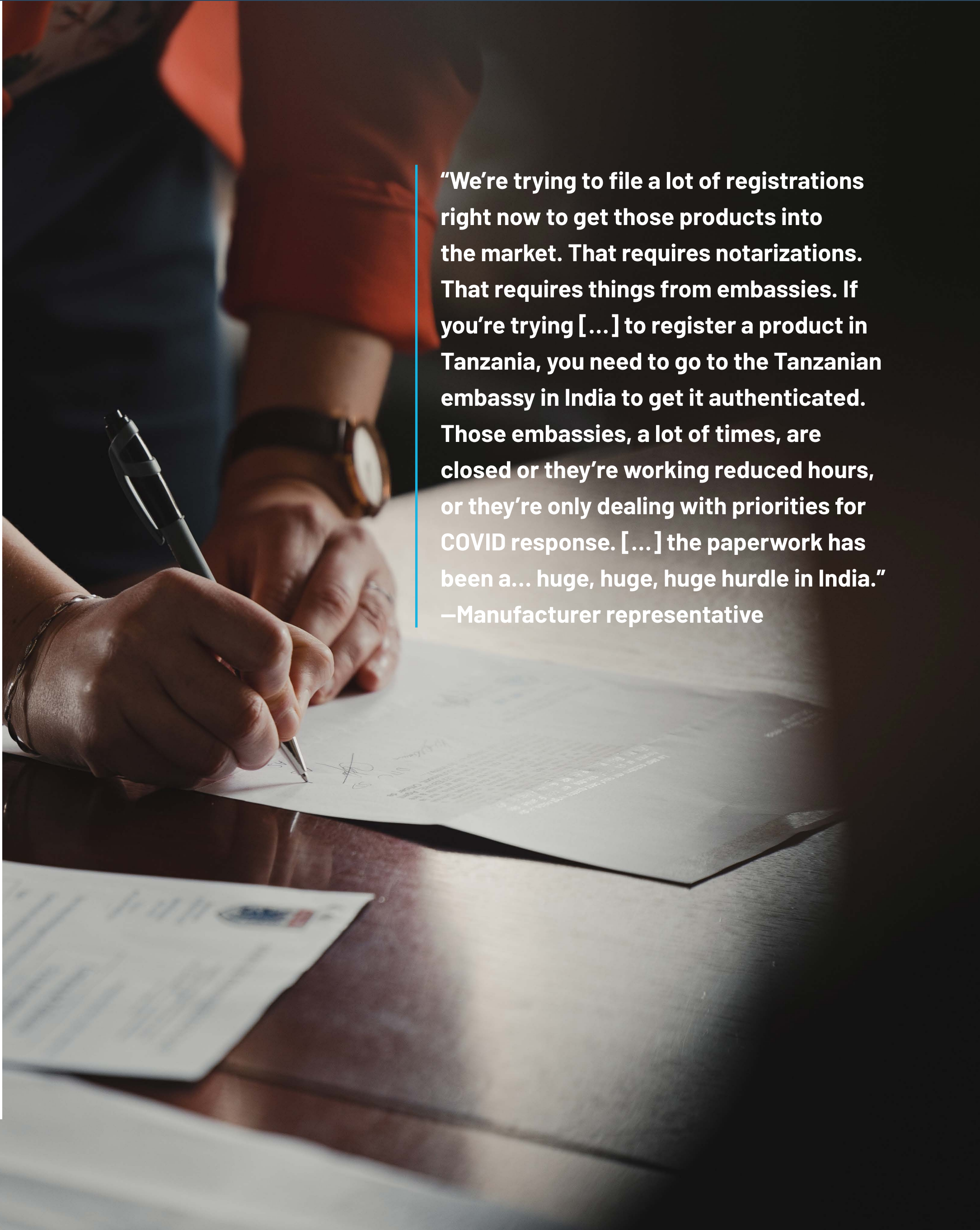
FINDINGS // MANUFACTURING

Staff reductions delayed product registration

Suppliers that were in process of registering new products reported delays due to closures of in-country registration offices. Closures and travel restrictions created delays/reductions in audits by global regulatory bodies. They even affected registration renewals.

Uncertainty in demand risked confidence and planning

Many of the manufacturers cited uncertainty in demand as a challenge to planning, particularly in the reactive and crisis management periods. In some cases, manufacturers and distributors saw a sudden uptick in demand; in others, orders were canceled or delayed. Requests for countries to place orders often made it difficult for manufacturers to distinguish between panic buying and longer-term trends for which they should plan. Anecdotes and rumors of potential overstocks and disruption to services were widespread, but data were limited. As many struggled to access adequate inputs and deal with higher costs, they wanted to ensure that anything they produced would be purchased.



“We’re trying to file a lot of registrations right now to get those products into the market. That requires notarizations. That requires things from embassies. If you’re trying [...] to register a product in Tanzania, you need to go to the Tanzanian embassy in India to get it authenticated. Those embassies, a lot of times, are closed or they’re working reduced hours, or they’re only dealing with priorities for COVID response. [...] the paperwork has been a... huge, huge, huge hurdle in India.”
—Manufacturer representative



FINDINGS // MANUFACTURING

Mitigation efforts focused on supplier diversity and inventory

Manufacturers explored different strategies to mitigate short- and longer-term risks for access to inputs and API. Some manufacturers said it was difficult to diversify geographically due to the concentration of API and raw materials in a few countries; others spoke of strategies that included producing their own API and/or having an existing network of multiple suppliers for production inputs. Some planned to increase inventory. One manufacturer said it had no trouble getting production inputs as it already had a diversified supplier base, both geographically and numerically. It acknowledged this came at a higher cost, but during situations like the pandemic, the tradeoff was advantageous.

While many of the manufacturers were able to adapt operations to a new work environment and return production capacity to pre-COVID levels, for others, disruption persists. As COVID-19 rates increase in different parts of the world and airports close or governments enact new restrictions on travel to/from and within certain countries, disruption remains a persistent threat.

Most manufacturers mentioned that in response to COVID-19 they would revisit their risk mitigation strategies, including supplier diversification and holding higher levels of inventory. However, other manufacturers acknowledged that this comes at a cost and would affect the pricing of their products. For some products, there are limited sources of quality-assured API and shelf life might limit the feasibility of this strategy.

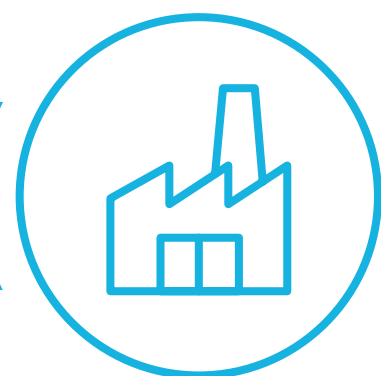


FINDINGS // PROCUREMENT

Procurement: Key Takeaways

- Early in the pandemic, increased lead times and uncertainty led to **increases in ordering and “panic buying”**.
- **Unanticipated funding requirements for PPE coupled with increases in supply chain costs put current orders at financing risk** and remain a significant concern for future SRH procurements.
- **Procurement decisions were hindered by lack of data on changes in demand**, thereby increasing risks for production, prices and expiry.
- **Flexible donor funding helped procurers minimize constraints** related to logistics, costs, and the provision of credit to customers.

- **Increased collaboration and information sharing with key stakeholders helped ensure procurements were fulfilled**, but this coordination required a significant level of effort.
- **Procurer strategies to diversify suppliers were hindered** by the constrained supplier base and geographic concentration of suppliers.



PROCUREMENT





Procurement challenges highlighted interdependency of supply chain

Data suggest widespread but “moderate” disruptions in procurement affecting both SRH and PPE supplies. While early in the pandemic these disruptions resulted in increased ordering and “panic buying”, in general, procurement delays tended to resolve themselves within weeks, rather than months.

Purchase orders were delayed or only partially fulfilled due to stalled production, lengthy procurement processes, constrained and costly freight, time needed to source from alternative suppliers, and changes in policies. Limited freight options and distribution networks (discussed in the next section) hindered the fulfillment of orders for SRH products, particularly on the part of procurers that were also responsible for arranging freight. Procurers cited disruptions including increased costs, limited time to negotiate or shop around, and the additional effort to secure the transport and fulfill the order. The bearer of this cost varied from manufacturer to wholesaler to procurer to donor.

Procurers adopted multiple risk-mitigation strategies to reduce dependence on a limited number of suppliers, but found that many of their identified suppliers were located in the same region and therefore were equally affected by the pandemic. As a result, several procurers reported that there was little they could do to mitigate disruptions attributed to limited and geographically concentrated supply. Others said that it was very difficult to establish relationships with new suppliers during the crisis response period because suppliers were prioritizing relationships with existing customers. Where new supplier relationships were formed, suppliers requested advance payment (particularly for in-demand items like PPE), which some procurement policies prevent.

weeks, rather than months

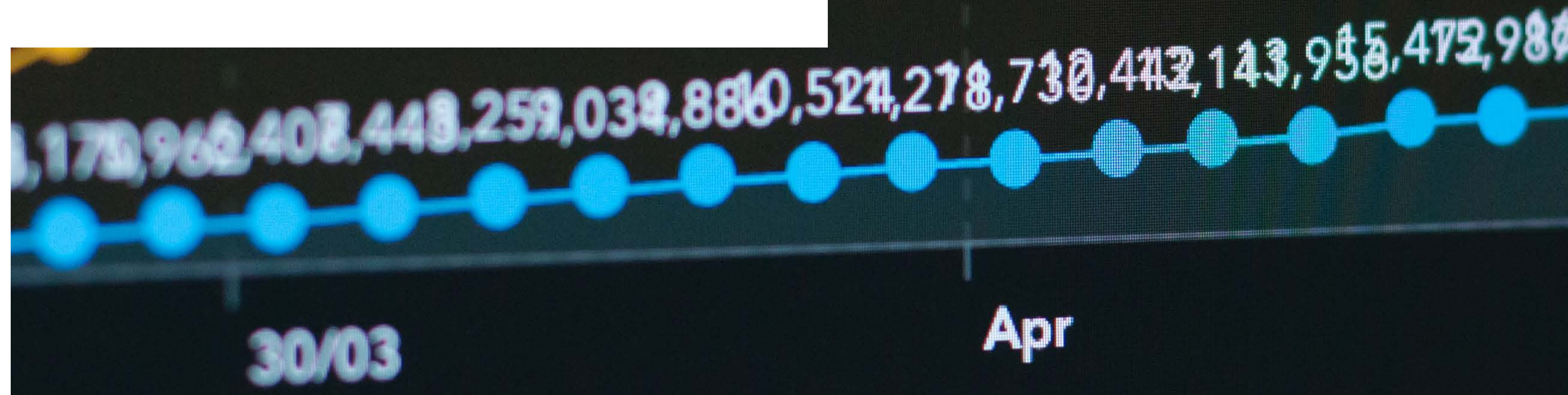
While early in the pandemic disruptions resulted in increased ordering and “panic buying,” in general, procurement delays tended to resolve themselves within weeks, rather than months.

FINDINGS // PROCUREMENT

Uncertainty over new demand patterns risks production, prices, and expiry

Procurement decisions were hindered by the lack of data to understand changes in demand, thereby increasing risk and uncertainty for procurers, their suppliers, and recipients. This played out in different ways, including:

- In the private sector, one procurer indicated that some wholesalers decreased their orders for SRH products for retail clients because they were uncertain if shops would stay open and what customer behavior would be.
- School closures affected the procurement of menstrual health products otherwise distributed as part of school-based programs.
- Procurers reported rapid changes in price and payment modalities. One global procurer reported that suppliers were no longer able to provide products at the prices originally quoted due to increased costs of operation.
- Concern that long lead times and freight delays increased the risk that products would arrive in-country with reduced shelf life.





Financing poses a risk for current orders and future SRH procurements

Requirements for PPE added a significant and unforeseen expense for many organizations. Almost all respondents raised concerns about financing for SRH product procurement due to the prioritization of PPE and increased supply chain costs (inventory holding, freight, etc.). For some, this risk was immediate; for others, it was a longer-term concern:

- For public-sector procurers using domestic and donor funding, financing for procurement of SRH was largely “protected” for 2020 because the SRH commodity funding had been allocated and orders already placed. However, several indicated that SRH commodity security was less certain for the coming years.
- Some private and retail sector respondents said that PPE procurement was being prioritized and paid for with reallocated SRH and other health commodities funding, or that their limited budgets were being stretched to buy PPE in addition to SRH commodities and to pay for increased logistics costs.
- For private and SMO stakeholders, cash flow for SRH procurement declined as client demand decreased or private outlets shifted to fast-moving goods, like masks, hand sanitizer, and PPE.
- Representatives of donor-supported organizations mentioned that additional donor funding and flexibility were critical to maintain operations, allowing them to procure needed PPE, absorb some of the additional freight costs, and provide credit to private outlets to help respond to cash flow problems.
- Others reported taking on additional costs (and associated risks) as the price of doing business, while noting that it was not a sustainable solution. A SMO respondent reported that in combination with additional and flexible donor funding, it took on greater risk to extend credit to retailers to keep the supply chain stocked.
- Commercial orders for menstrual health products with a higher upfront cost saw a significant drop in demand.

“I definitely saw the supermarkets putting their cash flow behind those fast-moving consumer good items that were going to keep that basic cash coming in the door. We’ve also seen a shift in their purchasing and their minimum restock orders have gone way down. They basically wait until they’re sold out. But instead of ‘just in time’ it’s basically a ‘sell out’ mentality and then they’ll purchase again[...] So if you look at stock on shelves, it’s about half of what it used to be.”—Manufacturer representative

“Products currently in health centers were procured and distributed with last year’s budget. More concern about the effects of COVID on next year’s budget, largely because funding has shifted to COVID-related commodities in many cases.”— Ethiopia representative



FINDINGS // PROCUREMENT

Coordination and Information Sharing

Respondents reported that they increased collaboration and information-sharing with key stakeholders to ensure procurements were fulfilled. Several indicated that they were sharing information on an ad hoc basis with those who, under normal circumstances, might be considered competitors, and taking on risk and often roles previously assumed by others in the supply chain. For example, they highlighted the importance of coordinating more closely with suppliers to “know the supplier’s supply chain” and working together to prioritize orders and find workable solutions. Most respondents said this increased coordination was positive and hoped to carry on doing so in the future. However, they also noted the significant level of effort required for this coordination.

SPOTLIGHT ON MENSTRUAL HEALTH AND HYGIENE SUPPLIES

Integrate SRH policies and understand unique supply chains to promote availability

While our assessment included menstrual health and hygiene products, findings were limited due to a lack of data. Our findings suggested that because these supplies and services are rarely prioritized as “essential” in national policies and information systems, related data are not systematically collected or reported. Within the context of a pandemic, these products were even less prioritized.

The following weaknesses were also exacerbated during the pandemic:

Manufacturing

Menstrual health products are non-pharmaceutical and therefore largely unregulated, making them easier to manufacture locally/regionally. Despite that, they often rely on global manufacturing for packaging and other inputs, which means they too were affected by the disruptions in global manufacturing, freight, and transport. As one local manufacturer said, “...even the locally available items, a lot of those are still imported as well, or some of the inputs are imported. So for example, thread is not available in the right colors and spare parts for machines weren’t available.”

Distribution channels

Menstrual health products also have diverse procurers and often rely on non-health distribution channels, further limiting coordination and resulting in data fragmentation. For example, menstrual pads are procured and distributed as part of water, sanitation, and hygiene and school-based programs, as well as via dignity kits in humanitarian settings.

Sales data

Another important channel for these supplies is the commercial sector. According to one respondent, the pandemic affected consumer demand (due to movement restrictions and diminished purchasing power) and retail cash flow. As a result, retail outlets often shifted from goods like menstrual products to faster-moving items, as reflected in changes in ordering.

Strategies to mitigate disruption were similar to those used for other SRH products, including diversifying suppliers. In addition, one menstrual pad manufacturer reported that it was able to pre-produce shelf-stable raw materials and pre-position them closer to their finished goods manufacturing base.



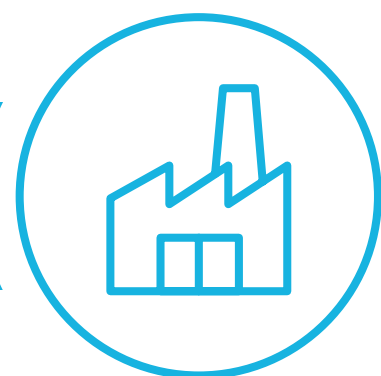
FINDINGS // GLOBAL LOGISTICS

Global Logistics: Key Takeaways

- **Global freight is a major source of disruption in supply chains;** challenges and associated increases in freight costs are expected to continue until 2024.
- **Changes to all transportation modes and lanes have had ripple effects across supply chains,** decreasing options and increasing costs and lead times.
- **Early in the pandemic, the situation was rapidly evolving,** yet intelligence was limited on the status of lockdowns, port closures, and freight availability.
- Policies prioritizing global movement of priority public health products and flexible financing **proved essential in rapidly unlocking logistics bottlenecks.**

- **Regional transport was disrupted, with long delays at border crossings.** Varying COVID-19 testing and quarantine policies created additional delays.
- **Reduction in passenger flights greatly reduced air freight options and altered routes/distribution networks** with a shift to sea freight, lower-tier carriers, and movement toward prepositioning inventory closer to clients.

"So there were a whole host of reactionary things that we were kind of forced into. You get to the destination and of course, as the ripple effects went through different destinations, you had port closures, you had labor problems, you couldn't get containers out of port, you couldn't get a shipment out of the airport, you couldn't get it into customs, you couldn't get it out of customs, then the document to export documentation wasn't ready."
- Freight forwarder representative





COVID-19 restrictions yielded freight disruptions, increasing costs and delaying shipments

Since the institution of lockdowns and travel restrictions, increased freight costs and significant delays in dispatching, clearing, and receiving shipments have become the norm. In the early days, port closures and rapid changes in freight options added to the chaotic and highly reactive atmosphere.

Representatives from freight forwarders confirmed reports of cost increases and variable shipping options. In response to scarcity and increased costs of airfreight, most suppliers and procurers have shifted transport to sea, increasing demand for a limited number of shipping containers and freight lines. Those resorting to air transport reported doing so because their volumes were too small for sea, because of the need to maintain the cold chain and/or because the speed and greater confidence in delivery outweighed

the costs. In tracking its key performance indicators, one international SRH service provider reported that its sea freight shipments increased from 7% to 47% by the end of August, while an international freight forwarder explained that it had pivoted to third- and fourth-tier carriers (less preferred) that normally would have been used only during very busy times, for 50–60% of shipments. Additional delays related to paperwork, route changes or cancelations, and supplier delays continued to disrupt the industry.

While the situation has improved since mid-2020, freight forwarders cautioned that logistics would continue to be a challenge for several years and that the industry is unlikely to return to pre-COVID-19 conditions until 2024.

“So I get a lot of reports that are based on on-time key performance indicators. And what I can tell you is, even today, we continue to see 15–20% of COVID effects on on-time key performance indicators (KPIs). And most of that is unscheduled stops by steamship lines. Export accelerations are not being done in a timely manner in-country. There are supplier backups, so we’re not actually able to get the freight in time. So it’s kind of a mixed bag that we’re still seeing that’s impacting about 20% of all shipments right now.”

—Freight forwarder representative



FINDINGS // GLOBAL LOGISTICS

Transport Delays

Several suppliers reported that regional transportation had been disrupted by border closures and cross-border COVID-19 testing requirements for truckers. One global logistics provider reported new testing policies and reductions in border staff in southern and eastern Africa that left some truckers stuck in countries where they were making deliveries. Port and border closures along overland routes to Zambia caused delays in receipt of goods to the country during the initial response period and drivers were kept in quarantine at borders for 2–3 weeks.

“Even up to now [Sept 2020] we’re seeing a 45km lineup of trucks at the Kenya/Uganda border. And that’s due to just reduced staffing of immigration staff, revenue authority staff and Border Patrol [...] And so I mean, we’re seeing significant delays in the transit from China or India to Mombasa, and then significant delays just from Mombasa getting to Uganda. And so those delays don’t just have time implications. They also have cost implications.” – Manufacturer, Uganda





Global-level coordination and cooperation have alleviated freight disruptions

International suppliers and logistics organizations, national governments, and private service organizations have taken a number of steps to mitigate logistics disruptions caused by the COVID-19 pandemic. Efforts have included the shift from air to sea freight, changes in policies that ease export and import restrictions and prioritize SRH products, and coordination of transportation resources.

While some countries imposed policies preventing the export of domestically produced health products, global coordination and leadership by WHO and the UN resulted in an official memo dated March 30, 2020 recognizing restrictions and calling for exceptions to these policies to ensure the timely export and safe arrival of life-saving products, including SRH products. Many informants cited the importance of that letter in alleviating barriers. Funding flexibility by some UN agencies and other donors also facilitated more rapid response to product needs.

Several procurers noted that coordination between partners, such as sharing charter flights, has helped save money and time, as long as partners fulfill their commitments. And procurers have explored coordination with the World Food Program Common Services platform, which can provide transportation services during emergencies to mitigate delays in transportation of health products. However, according to key informants, this platform seemed to be used minimally for SRH shipments.

Other respondents specifically registered their surprise that there was not more coordination and cooperation among SRH community members to respond to the disruptions by working together more closely.

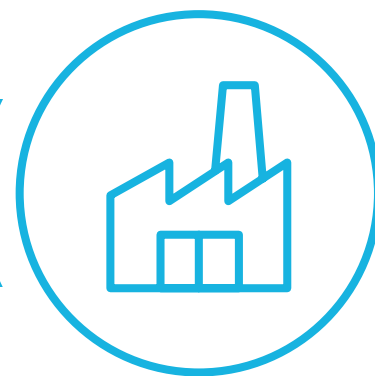
coordination between partners

Several procurers noted that coordination between partners, such as sharing charter flights, has helped save money and time, as long as partners fulfill their commitments.

FINDINGS // NATIONAL SUPPLY CHAINS

National Supply Chains: Key Takeaways

- **Inventory levels at the outset of the pandemic and purposeful distribution** helped ensure product availability.
- **Initial prioritization of COVID-19 supplies and pandemic mitigation efforts shifted attention and resources away from SRH supply management**, impacting ordering, fulfillment, transportation, distribution, and storage.
- After an initial period of disruption, **countries adapted systems and policies to prioritize SRH supplies** and overcome supply chain constraints.





Pandemic response strained warehousing and storage capacity and disrupted distribution but systems adapted to resume operations

During the pandemic, particularly in the first months of response, national and subnational government supply chain players in Ethiopia, Kenya, and Zambia often prioritized the allocation of resources for procurement, storage, and distribution of COVID-19 products. The volume and bulkiness of those products, coupled with safe working requirements, created supply chain bottlenecks.

Storage

Storage challenges were noted, particularly in Ethiopia, where MOH officials reported that the reduction in client services plus significant volumes of COVID-19 related supplies heightened the need for product storage and increased overall costs. Space constraints in central warehouses delayed the clearance of products from ports, resulting in additional demurrage and storage costs. Other procurers noted that PPE procurement and product bulkiness reduced overall storage capacity, particularly at central stores. Procurers that shifted to holding more inventory as buffer against shortages also realized increased warehousing space requirements. In Zambia, respondents also reported insufficient storage space at the national, subnational, and health facility levels.

“I will say that the supply chain for all commodities generally has been disrupted. [...] The demand that that came with coronavirus really shifted everything. Basically, family planning was 3rd place if at all it was on the table. There was a need for an urgent response and preparedness for COVID-19 and family planning was not even considered as a priority at all. So we had COVID as the first demand for action, and we were now struggling to cover the essential medicines, because we knew that it [COVID] will affect that. And then there was the HIV programming, the TB, which we knew was also to be disrupted. So family planning was not considered an emergency at all.” – Kenya representative

FINDINGS // NATIONAL SUPPLY CHAINS

Warehouse operations

Reduced working hours due to curfews and changes in shift schedules delayed the picking and packing of orders. This was reported as an initial challenge to operations in Kenya and Zambia.

Distribution

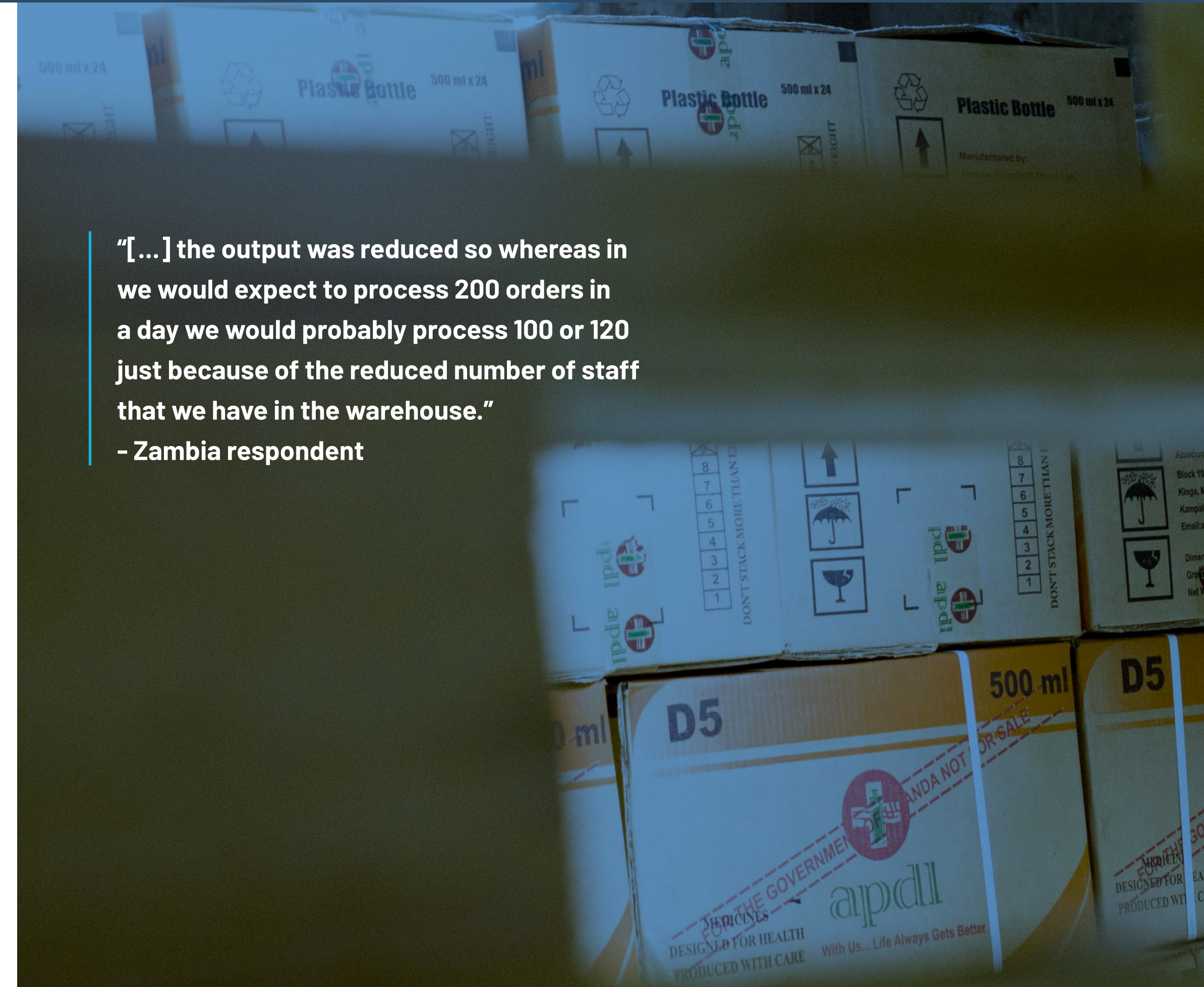
Reduced workforce, travel restrictions, and the addition of COVID-19-related supplies hindered routine distribution operations.

For example, in Ethiopia, vehicles usually used for routine deliveries were repurposed for COVID-19-related products. The Ethiopian Pharmaceutical Supply Agency (EPSA) tried to integrate SRH commodity distribution with PPE, but found it difficult because of the volume and bulkiness of PPE and other COVID-19 products. EPSA also tried to make more frequent deliveries of PPE and other products to hubs, but this increased transportation costs. The agency reported that the situation returned to normal, but bottlenecks lasted through September 2020.

More frequent inconsistent smaller deliveries into Zambia caused delayed and incomplete product distribution from central to facility levels. A representative from Zambia also reported that problems in local transportation and distribution resulted in overstocks at the central level and low stock at service delivery points.

“[...] the output was reduced so whereas in we would expect to process 200 orders in a day we would probably process 100 or 120 just because of the reduced number of staff that we have in the warehouse.”

- Zambia respondent





Restrictions on personnel movement curtailed supervision, meetings, and supply chain monitoring

In addition to reduced warehouse capacity and distribution staff, human resource restrictions and policies restricting movement for non-essential activities greatly limited and even prevented supervision and technical support efforts at multiple levels of the system.

“[...] going to the facilities helps with the issues of redistribution. In one facility, you may have some excess you take to another, but there are no movements [because of] COVID and you cannot move the stocks that are packed there. In the past, we were able to move and make sure there is some kind of balance, but with the restrictions we have found it very difficult to get here and there.” - Zambia representative (subnational)

Supervision and monitoring

In all three countries, staff were unable to directly monitor activities at the facility level. This made it difficult to verify the delivery of commodities and/or audit stock levels at each facility. Instead, partners and ministries were reliant on desk reviews to capture this information and did not always have access to the data required. Limited physical monitoring also prevented them from solving stock challenges, particularly around redistribution, efficiently.

Meetings and planning

Policies requiring social distancing limited government and partner ability to hold important meetings related to:

- planning and budgeting
- data review and data quality
- forecasting and supply planning.

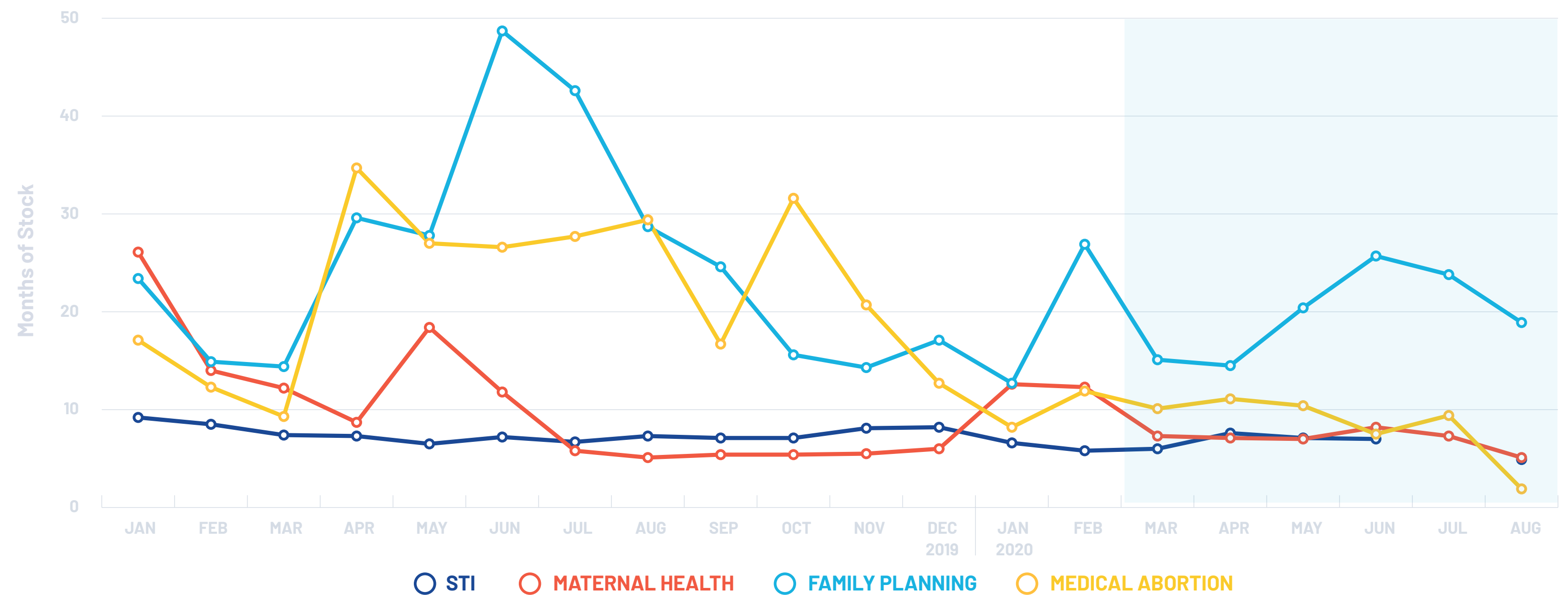
Concerns were also raised about lack of up-to-date data and the inability to “see” stock levels across the system. Lack of real-time data, coupled with declines in consumption due to reduced service delivery, hindered accurate and effective supply chain decision making.

FINDINGS // NATIONAL SUPPLY CHAINS

Despite disruptions and delays, stock levels and mitigation efforts helped minimize impact

- Stock levels at or above system-prescribed inventory levels at national stores reduce the effect of delayed shipments.
- Looking at aggregated data for the public sector in five countries*, higher inventory levels at the outset of the pandemic—aggregated across system levels and measured in months of stock (MOS)—offset delays in global shipments, port closures, extended clearance times, and other disruptions.
- Comparing data from before and after the onset of COVID-19-related disruptions revealed minimal fluctuations in stock levels.
- Although average months of stock on hand may have decreased at some levels of the service delivery system, for the most part they stayed above minimum stock levels as defined by each country. Nevertheless, over the course of the analysis period, a downward trend in stock levels was seen for all products, thereby raising questions about the outlook for all products.
- A more detailed look at inventory management from Ethiopia is in Appendix E.

AVERAGE MOS ACROSS FIVE COUNTRIES*



* Bangladesh, Ethiopia, Kenya, Pakistan and Zambia



After an initial period of disruption, MOH and partners overcame these constraints to help SHR products get to where they were needed

Policy decisions mitigated delays in distribution:

- In Ethiopia, “essential medicine” status allowed products to flow across the border at Djibouti, where earlier delays had created backlogs. Ethiopia’s regulatory body adjusted the requirements for documentation during customs clearance to reduce bottlenecks.
- In Kenya, the Kenya Medical Supplies Authority (KEMSA) was given special status as an essential service provider, allowing it to transport products during curfews. Kenya officially increased the minimum stock level at service delivery points from four to six months during the pandemic to protect against delays and uncertainty.
- A pharmaceutical distributor reported that some government policies eased delays, including temporarily waiving some labeling and marking requirements for consumables and reducing custom rates on some products.

Supply chain management changes to promote product availability:

- In Ethiopia, the government outsourced in-country distribution to an Ethiopian shipping agency with the aim of increasing “surge capacity”. The MOH issued a directive to regions to ensure maximum stock availability at facilities in April and May; to that end, hubs pushed commodities to facilities regardless of orders.
- In Ethiopia, healthy stock positions in March mitigated delays, with new shipments delayed only by days or weeks, not months. When stocks began to run low, the government used data to prioritize clearance of those products most in need and rationed distribution of products until adequate supplies were available.
- KEMSA had sufficient stock of some items to withstand delays, but not at subnational levels, where some counties

had to source products from elsewhere. In many countries, ministries changed policies to increase the quantity of products dispensed during a visit to reduce client exposure to COVID-19 at health facilities. To mitigate shortages at facility levels in response to this change, and in reaction to the uncertainty of supply, subnational facilities increased inventory levels.

- In Zambia, the MOH and Medical Stores Limited (MSL) temporarily added a provincial level to assist with distribution of COVID-related supplies. The MOH also provided “allocation lists” to ensure that commodities delivered to their central stores were more equitably distributed to provinces.

FINDINGS // NATIONAL SUPPLY CHAINS

Other mitigation efforts included:

Sharing information and changes in policies that allowed more efficient receipt and distribution of products in-country; coordination of transportation resources, and increased inventory holdings.

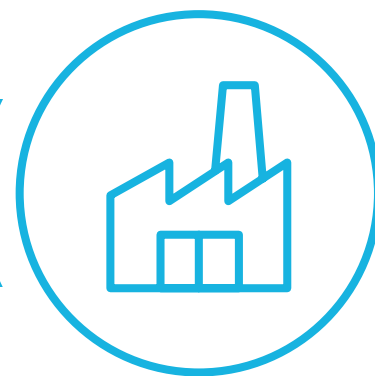
- According to sources, in-country communications also helped maintain stock availability. In Kenya, health staff used WhatsApp to make decisions about redistributing the limited supply of some products, while in Zambia, pharmacy personnel used the app to communicate product stock status and inform implementing partners in specific regions how to distribute products to facilities that needed stock.
- In Zambia, respondents reported that coordination with other organizations is now standard practice; there was a shift towards collective decision-making and action to fill supply gaps.



FINDINGS // SERVICE DELIVERY

Service Delivery: Key Takeaways

- Early months of the pandemic saw the **largest decline in both SRH service availability and client demand**.
- By July 2020, **demand rebounded** to pre-COVID levels across countries and regions.
- **Continuity of service delivery was supported by national policies and guidelines**, and by early responses to provide IPC.
- **Limited real time data** to understand changes in client demand put supply chain decisions and planning at risk.
- As evidenced in one country, **community level health providers with available supplies were instrumental** in promoting continuity of essential services.





Early phases of the pandemic saw largest decline in both service availability and client demand

Early in the pandemic, service delivery and care-seeking decreased as governments and health systems sought to adjust to new working conditions and assure safety to staff and clients.

Providers without PPE feared contracting COVID-19 when working at facilities. In some countries, health workers who were pregnant, older, or had pre-existing conditions were encouraged to take leave and avoid health facilities to reduce their risk of contracting COVID-19. This left some facilities understaffed and placed an additional burden on remaining staff. Adequate staffing also became a problem because providers were re-assigned to COVID-specific tasks and facilities.

Until exemptions were in place, transportation restrictions and lock-down measures made it difficult for providers to get to work. As a result, facility hours were shortened and some (predominantly private) facilities closed.

Similarly, decreases in demand for services were attributed to the fear of contracting COVID-19, the inability to reach health facilities in light of travel restrictions, and the fear of being turned away at facilities checking for COVID-19-like symptoms. The conversion of health facilities to COVID-19 isolation centers meant longer travel times, which could also have been an obstacle to care-seeking for SRH services.

“[COVID] has already caused destruction in meeting family planning needs. Clinical staff are occupied with the COVID-19 response and may not have time to provide services. [There is a] lack of personal protective equipment to provide the services safely.”
- Ethiopia representative



Service delivery continuity was aided by national policies and guidelines and early response to provide IPC

Early in the pandemic, it became clear that additional IPC measures would be required in facilities. Ministries of Health in all three countries worked to provide PPE and install handwashing/sanitizing stations. Respondents in Kenya noted that screening measures were put in place in facilities to detect and isolate suspected COVID-19 cases, and respondents in all three countries said that social distancing policies were instituted in facilities. In addition to classifying services as “essential” and exempt from travel restrictions, the WHO and governments in Ethiopia, Kenya, and Zambia made recommendations to promote FP service continuity. In Ethiopia, the MOH also developed self-care guidelines that educated clients on how to continue their FP method of choice without having to see a provider, and promoted long-term methods that, once initiated, would reduce contact with the health system.

The MOH in Kenya released guidelines to promote continuity of services in the context of COVID-19. The guidelines extended dispensing quantities for condoms and oral

contraceptive pills to three months, suspended elective surgical contraception (insertion and removal) and restricted community-based distribution of contraceptives to pills and condoms. The guidelines also discouraged “unnecessary” method switches and promoted methods like pills, condoms, and patches, which require less interaction between clients and providers. However, health care workers reported that clients often chose to continue with existing “higher-contact” methods.

Finally, the guidelines encouraged all types of institutions to provide FP services on a 24-hour basis to reduce the workload placed on FP clinics. Respondents in Kenya and Ethiopia said these policies promoted continuity of SRH services, particularly during the early months of the pandemic.

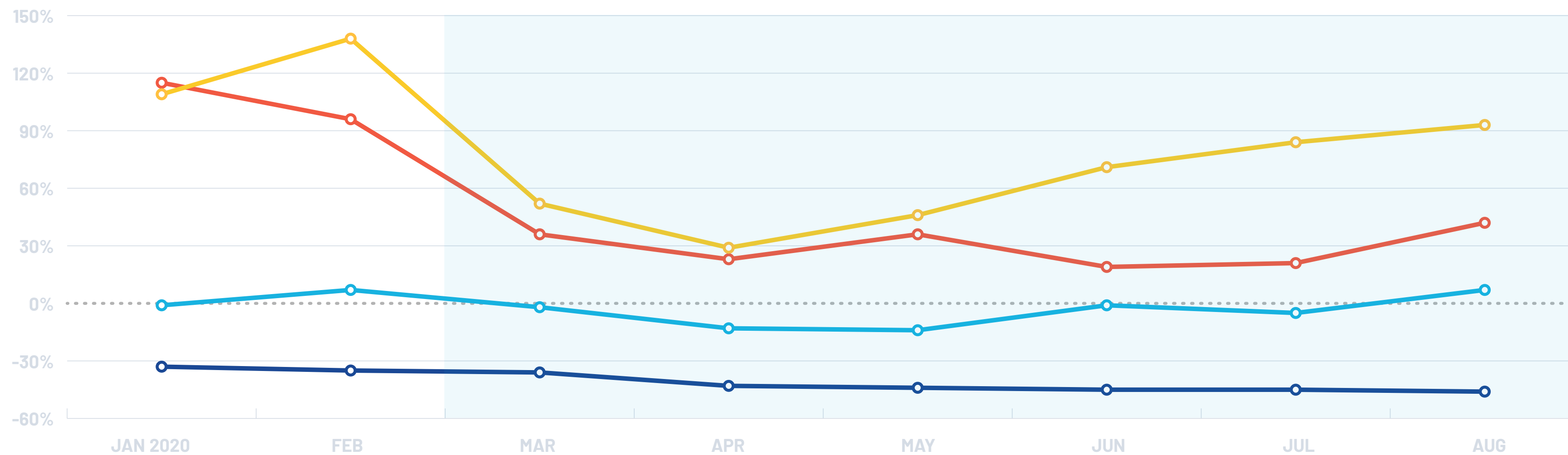
service continuity

In addition to classifying services as “essential” and exempt from travel restrictions, the WHO and governments in Ethiopia, Kenya, and Zambia made recommendations to promote FP service continuity.

Multiple data sources confirm a rebound in SRH product consumption after initial decline

Most respondents at the global, national, and subnational levels noted that demand for SRH products and services had mostly returned to normal at the time of our interviews (Aug–Oct). Our quantitative data supported that view. Review of eLMIS/DHIS2 data from six countries* in Africa and Asia showed that consumption as a percent change from 2019 monthly averages decreased for MA, FP, MH, and STI products after Feb 2020, but had returned to 2019 average levels (or higher) by July 2020. The declines in FP consumption were smaller than those seen in consumption of MH and MA products.

PERCENTAGE CHANGE IN CONSUMPTION QUANTITIES FROM 2019 MONTHLY AVERAGE*



Note on graph interpretation: A 0% change represents consumption levels similar to those in 2019; percentages above zero represent consumption at higher levels; and percentages below zero represent consumption at lower levels than 2019.

- STI
- MATERNAL HEALTH
- FAMILY PLANNING
- MEDICAL ABORTION

*Bangladesh, Ethiopia, Kenya, Indonesia, Pakistan, and Zambia

SPOTLIGHT ON THE ROLE OF COMMUNITY HEALTH WORKERS



Mobilization of HEWs in Ethiopia for COVID-19 screening promoted FP services

Ethiopia mobilized its large pool of community-based health workers—known as health extension workers (HEWs) and who provide essential services such as antenatal care follow-up visits, FP provision, immunizations, and referral for MH services—in its pandemic response. In April, HEWs were tasked with going door-to-door to screen for COVID-19 symptoms and refer and report possible cases. Reporting infrastructure and guidelines were updated to ensure that HEW screening reports were sent to the national level.

Despite decreases in service delivery and use in the early months of the pandemic, it appears that the delivery of services by Ethiopia's HEWs may have actually increased.

One official from Ethiopia noted that “support and follow-up [by HEW Supervisors] from the primary health care unit and woreda [district level] has since increased and better coordination was established as a result of more focus [on HEW service provision] due to the new comprehensive and reporting guidelines from the national level.” These observations suggest that mobilization of community level health providers during an emergency can promote continuity of essential services.



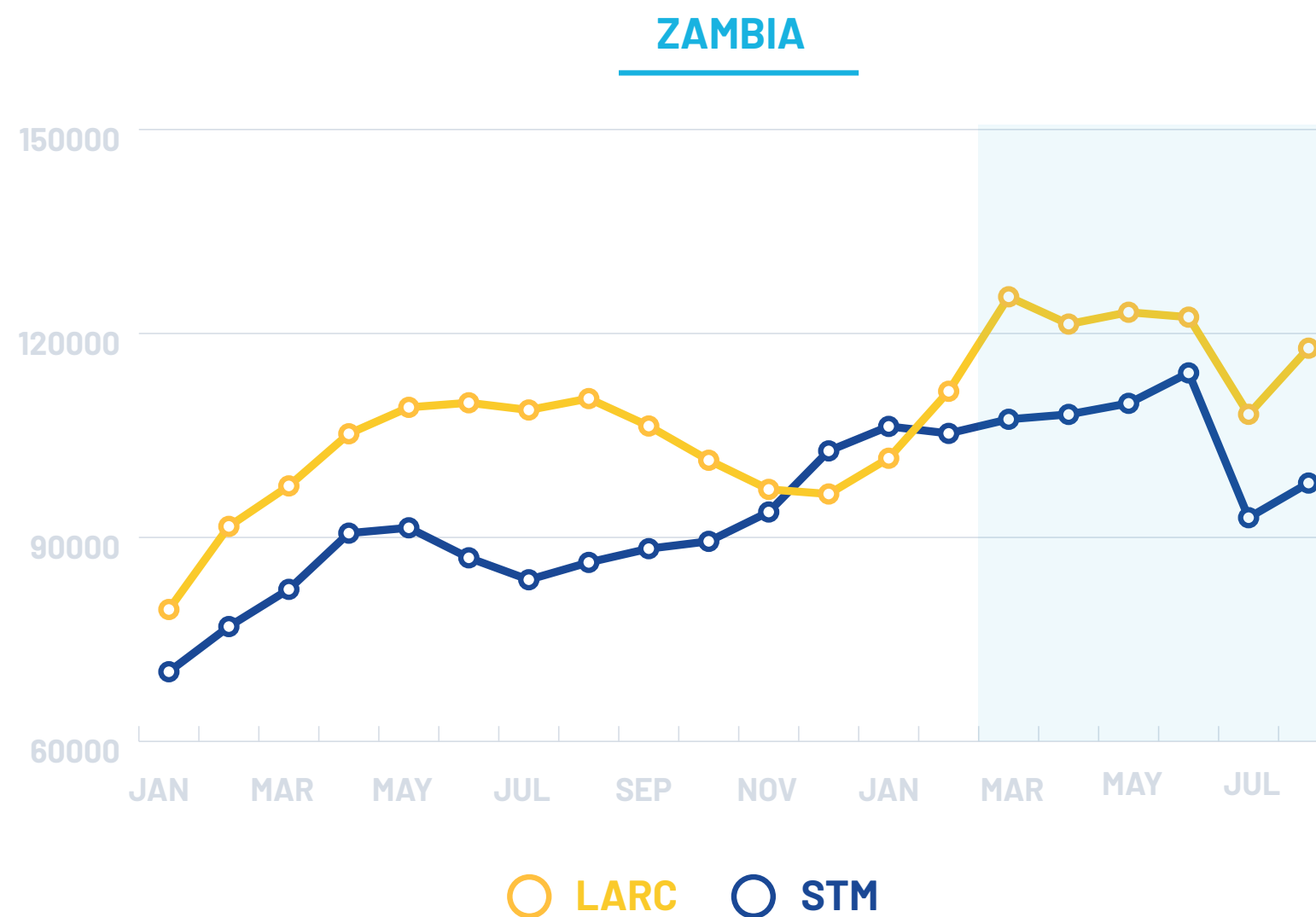
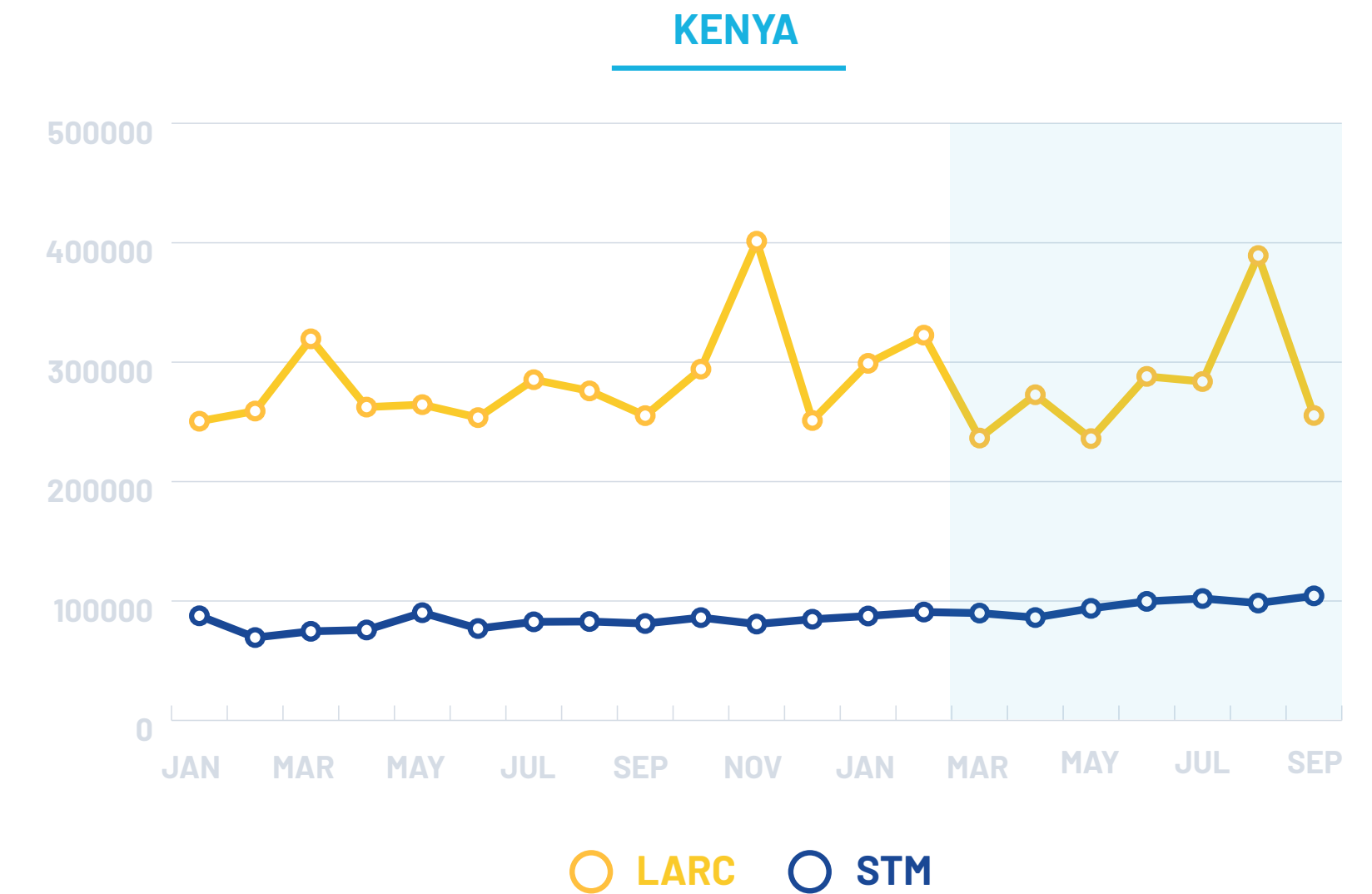
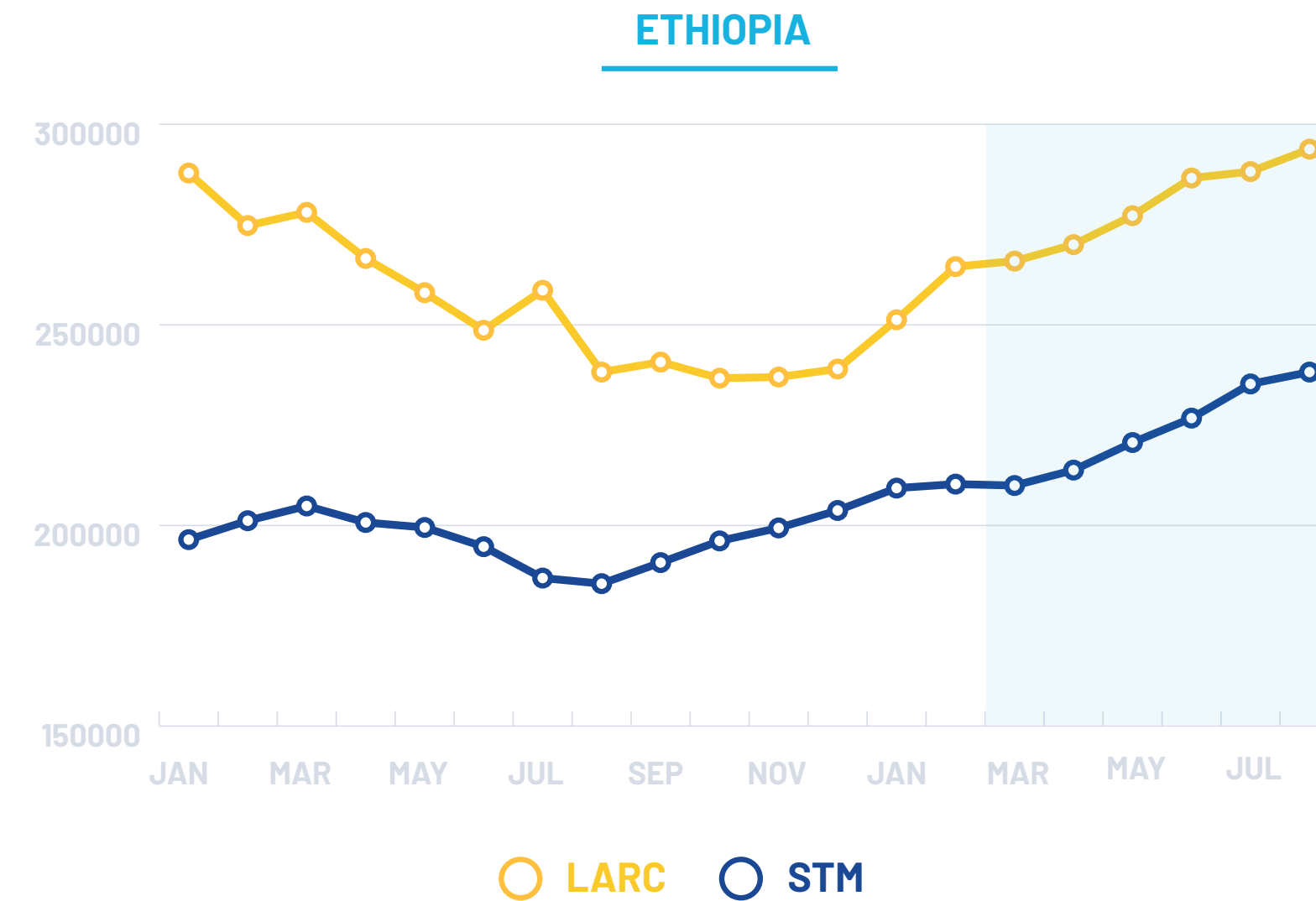
FINDINGS // SERVICE DELIVERY

During the crisis phase, there were limited changes in CYPs

For FP products, we analyzed changes in couple years of protection (CYPs) derived from either consumption or issue data to evaluate the effect of COVID-19.

Although Kenya saw a brief initial decline in CYPs from IUDs and implants, CYP levels for short-term methods such as orals (all types), injectables, and condoms seemed to be in line with those of the past. In Zambia and Kenya, trends for both long- and short-term methods appeared to increase during March/April to Sept 2020.

TOTAL CYPs PROVIDED USING ISSUES/CONSUMPTION DATA



Notes on data:

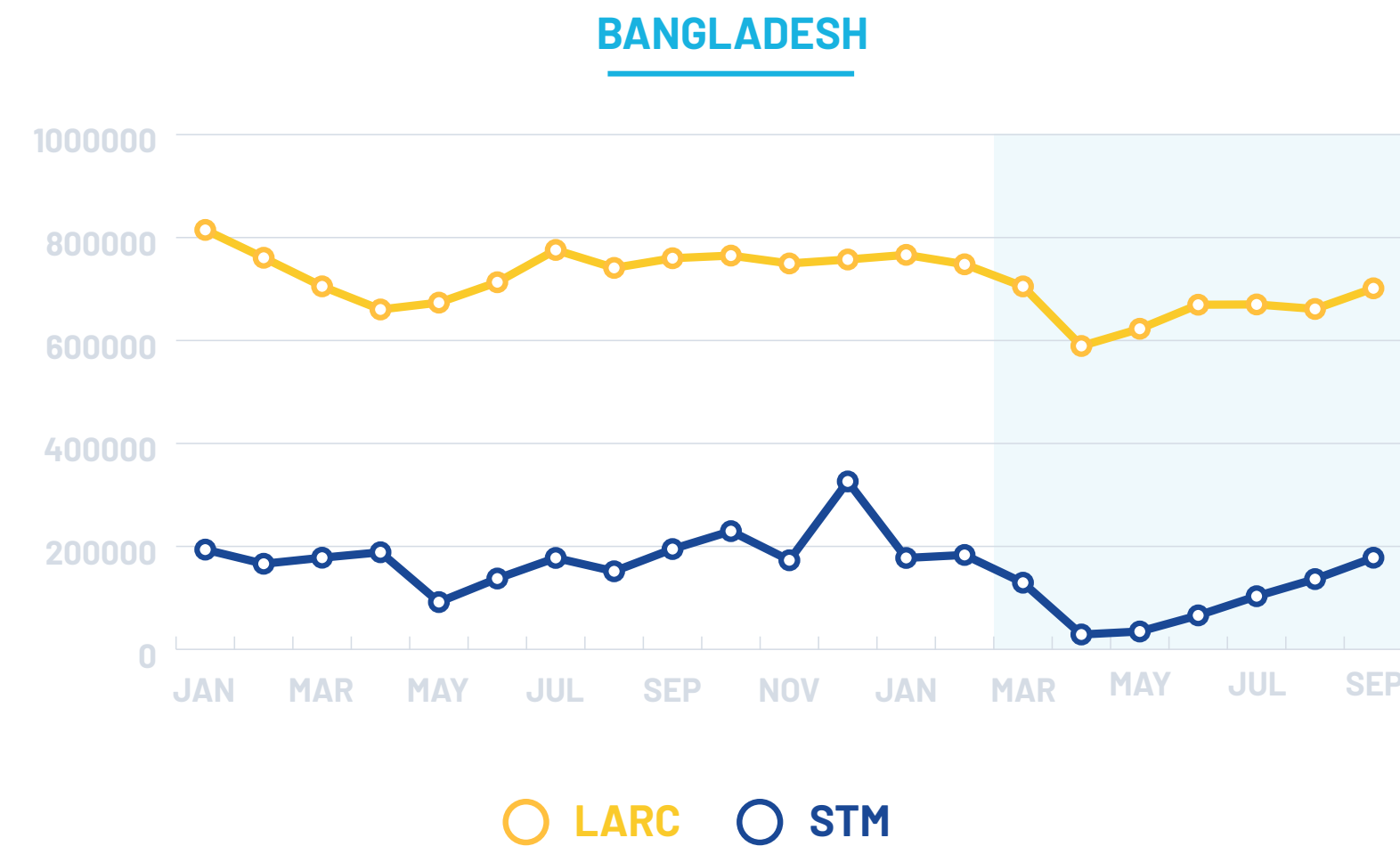
- Issues data from hubs were used in Ethiopia; consumption data from service delivery points were used in Kenya and Zambia.
- LARCs for Ethiopia, Kenya, and Zambia: 1-rod 2-rod implants and IUDs.
- STMs:
 - Ethiopia: DMPA-IM, COCs, emergency contraception (EC), male & female condoms.
 - Kenya: DMPA-IM, COCs, POPs, EC, male & female condoms.
 - Zambia: DMPA-IM, Net-En, DMPA-SC, COCs, EC, male & female condoms.

FINDINGS // SERVICE DELIVERY

Data from other countries suggest different trends

Compared to Ethiopia, Kenya and Zambia, data from Bangladesh, Indonesia, and Pakistan suggested a much more dramatic decline in FP product consumption overall, and in particular LARCs, in the 4–5 months before the rebound. We did not, however, research the context in those countries; other circumstances may have affected consumption.

TOTAL CYPS PROVIDED USING ISSUES/CONSUMPTION DATA

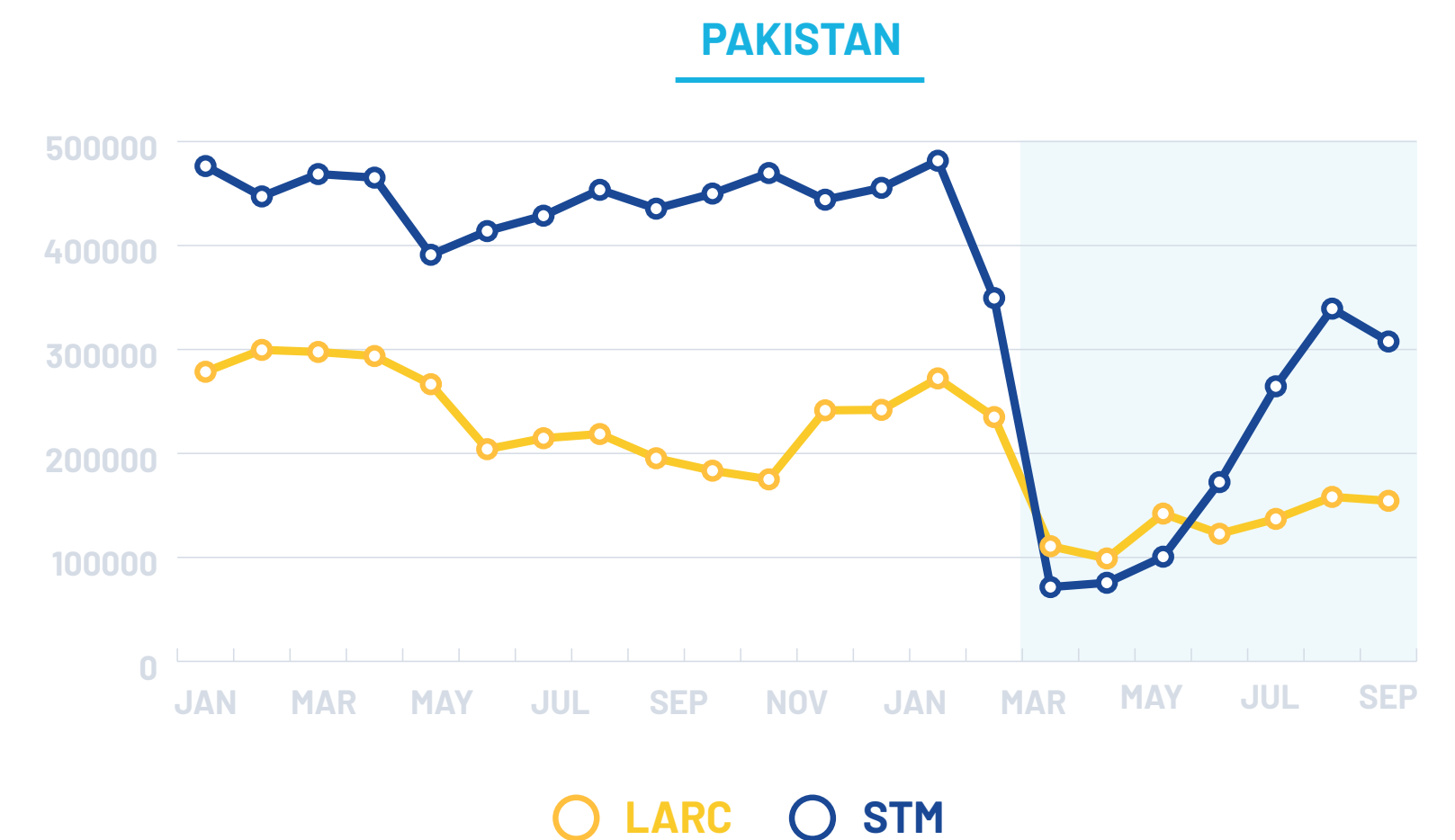
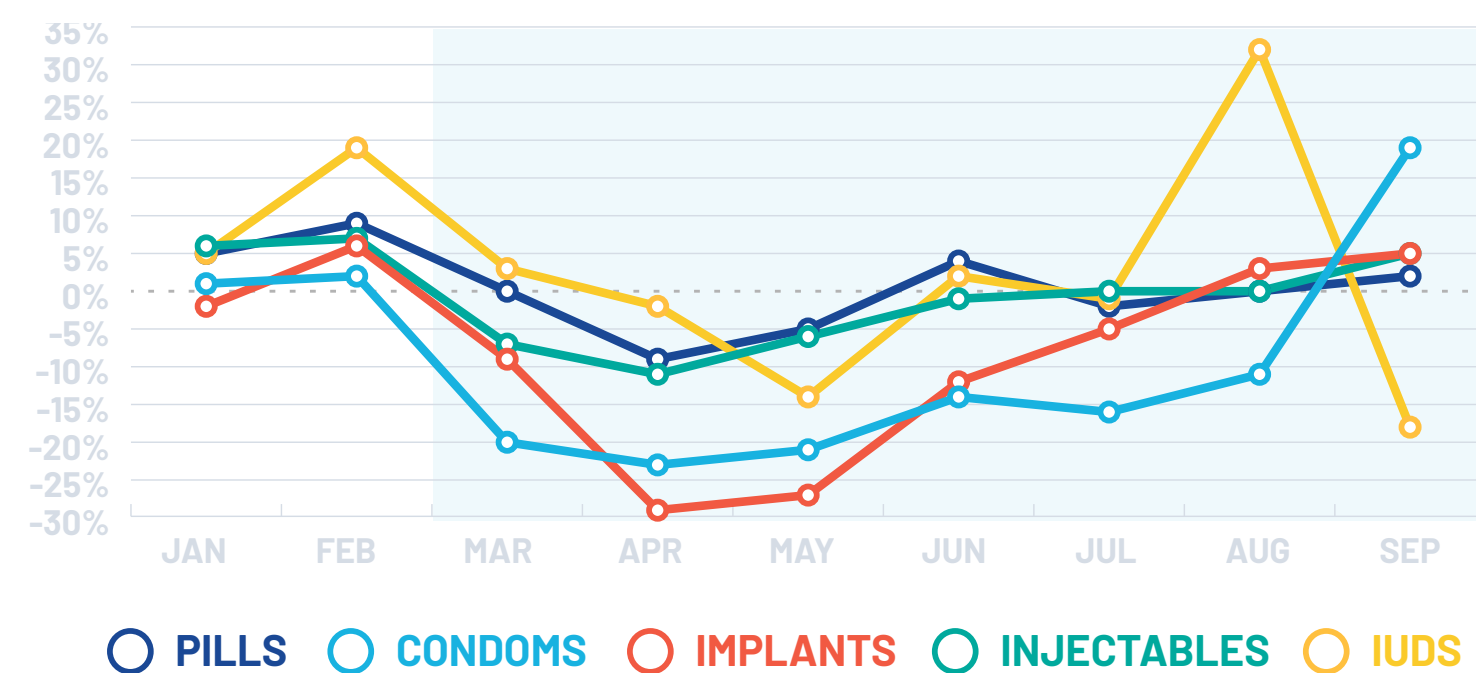


PERCENTAGE CHANGE IN CONSUMPTION FP CYPS FROM 2019 MONTHLY AVERAGE FOR SIX COUNTRIES*

Looking at the year-over-year change in CYPs by method (compared to 2019 average), all six countries show a dip March–July 2020 for all methods, but more pronounced for condoms and implants than other products.

Note on graph interpretation: A 0% change represents CYPs similar to those in 2019; percentages above zero represent CYPs at higher levels; and percentages below zero represent consumption at lower levels than 2019.

*Bangladesh, Ethiopia, Kenya, Indonesia, Pakistan, and Zambia



FINDINGS // SERVICE DELIVERY

Inconsistent information and limited access to real-time data undermine decision making at country levels

Uncertainty and potential disconnect between guidance and actual product use, coupled with limited real-time data to understand changes in client demand, put supply chain decisions at risk; and this uncertainty rippled through the supply chains.

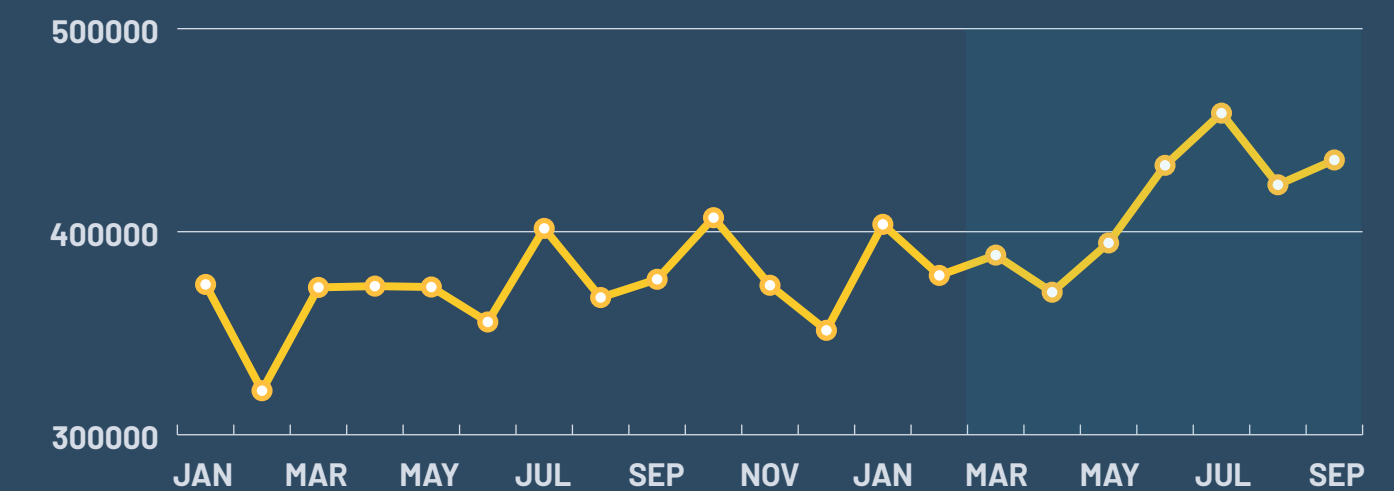
For example, when discussing changes in demand for specific FP methods, several respondents in Kenya noted that demand for STMs had decreased despite guidance published by the Ministry to promote them. At the same time, others in the SMO community reported precisely the opposite; that the proportion of client demand for STMs “shot up”.

SPOTLIGHT: SERVICE CONTINUITY IN KENYA

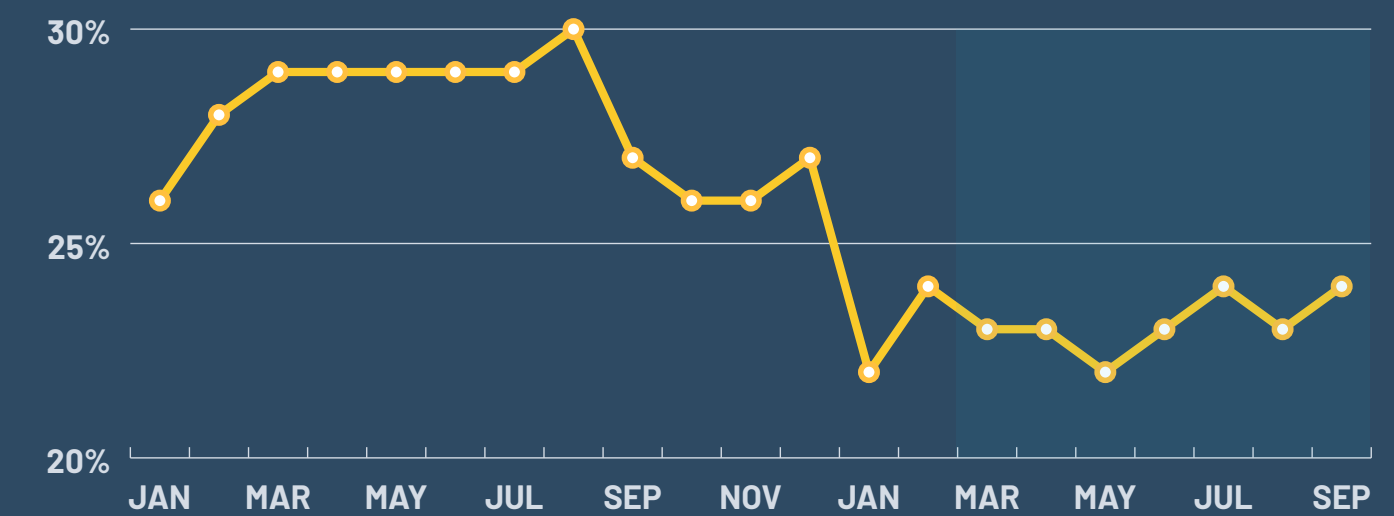
Data from Kenya reveal trends in overall use of FP methods amid changing guidelines on care-seeking. We found that:

- Modern contraceptive prevalence rates increased following the COVID-19 crisis management period. This aligns with data reported by Performance Monitoring for Action (PMA) 2020 that showed that more women switched to longer-acting methods and moved away from traditional or no methods.
- Adolescent pregnancies reveal an overall downward trajectory, though this trend is a lagging indicator and follows a period of reduced access to contraceptives. Clients may have delayed care-seeking during the pandemic or sought care from alternative sources than those captured in this data.
- LARC removals dipped slightly April–June 2020 in line with overall decreases in service delivery, but appear to have resumed at pre-COVID levels by July 2020.

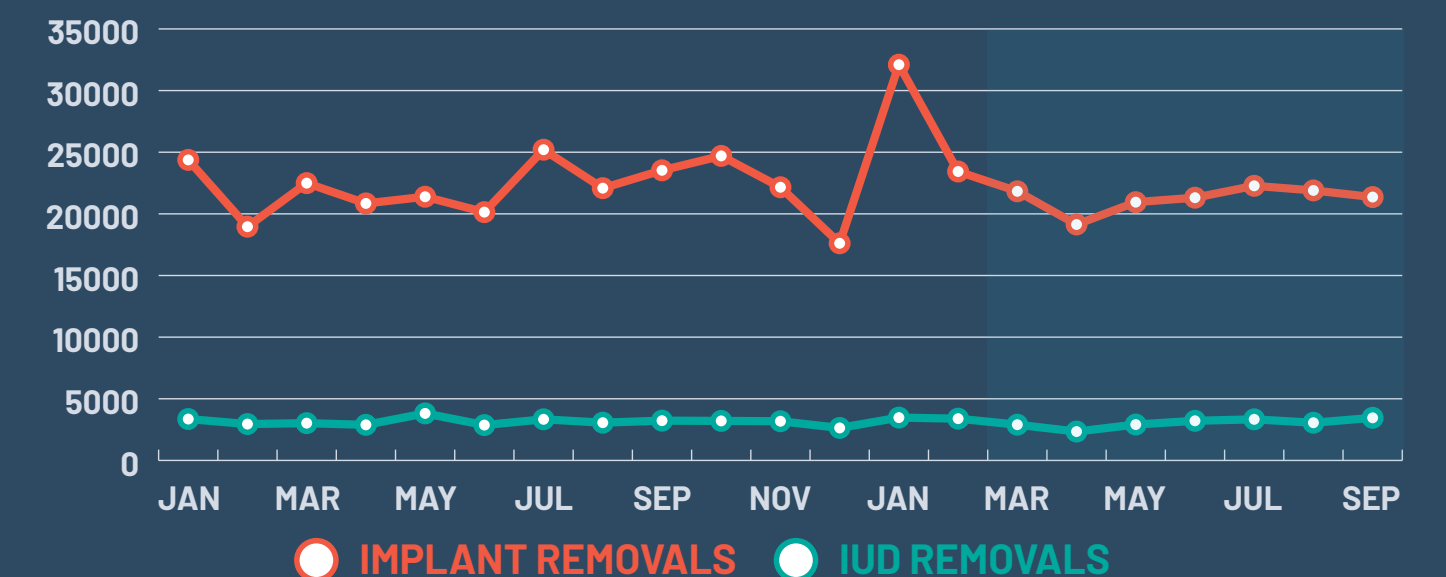
TOTAL WOMEN OF REPRODUCTIVE AGE RECEIVING MODERN CONTRACEPTIVE METHODS



PERCENTAGE OF PREGNANT WOMEN WHO ARE ADOLESCENTS (10-19 YEARS)



IUD AND IMPLANT REMOVALS





WHAT THIS MEANS FOR SRH SUPPLIES AND SUPPLY CHAINS

Discussion: What does this mean for SRH supplies and supply chains?

In the preceding sections, we presented the findings “as reported” by key informants and quantitative data sources. Here we discuss our interpretations of the findings and what they mean for SRH supplies and supply chains during and post-pandemic.

During the pandemic there was significant media attention to, and anecdotal reporting of, SRH stockouts at facilities. Our findings from the initial acute crisis period, however, indicated the contrary. While this offers some good news, there are signals that the SRH supply community must remain vigilant and maintain focus. Given lags in information systems and long procurement cycles, the full effects may not be evident until well into 2021. It is also uncertain how much longer health systems and supply chains can withstand ongoing stressors, especially as countries face second and third waves of the pandemic. Furthermore, the rollout of COVID-19 vaccines presents new opportunities and risks for SRH supply chains.

During the most acute phase of COVID-19, we did find evidence of decreased use of services and demand for products, but these appeared to have rebounded following a period of response and adaptation to ensure services could be provided to clients while limiting the risk of disease transmission.

Available data indicated no signs of widespread COVID-19-related SRH product stockouts at facility levels during the period of our study (Sept/Oct 2020). This was mostly due to systems designed with higher inventory levels and “slow” procurement cycles, which in this case were protective and allowed systems to withstand disruptions of 3–6 months. Where funding was already at risk and stock levels low, however, the risk of stockouts becomes more acute. And overall, findings indicate that risks to SRH supply chains moving forward are high.

our findings indicated the contrary

During the pandemic there was significant media attention and anecdotal reporting of SRH stockouts at facilities. Our findings from the initial acute crisis period, however, indicated the contrary.



WHAT THIS MEANS FOR SRH SUPPLIES AND SUPPLY CHAINS

Building resilience in people and processes, while acknowledging the need to protect SRH during a crisis

Every organization and individual consulted for this study mentioned significant COVID-19-related disruptions to supply chains, but each also explained how they had adapted to the crisis and resumed operations. While there may have been an initial period of uncertainty, slowdown, or even temporary shutdown, nowhere did work fully stop or operations cease altogether. Individuals and organizations were resilient. Problems were solved, adaptations identified, and mitigation strategies implemented. Most organizations and governments managed through the crisis period and were able to resume SRH service delivery within 3-6 months of initial lockdowns.

All three focus countries in our analysis experienced different sorts of disruptions within their national supply chains:

- Ethiopia—distribution-related challenges limited movement of products due to the additional capacity required for PPE.
- Kenya—staffing disruptions at central-level warehousing limited the ability to fulfill orders in the short term.
- Zambia—storage and distribution-related challenges resulted in stock imbalances due to the prioritization of COVID-19-related supplies.

Yet in all three countries, within months, each system adapted itself to the specific context. To the extent that funding was available and sufficient procurements were in progress, supply chain operations resumed; and provision of SRH products to service delivery points got underway.

Each country's response was aided by a commitment to SRH services and the determination to designate SRH products as "essential", thereby allowing supplies to continue to flow. It is worth noting, however, that menstrual health products were not always included in this designation.

COVID-19 presents an opportunity to learn from what worked well and what could have been done differently. Individual and organizational resiliency exists, but is rarely institutionalized in global SRH service delivery and supply chain structures. How can the lessons from COVID-19, the Ebola epidemic, and other recent disruptions inform collaborative efforts to ensure that SRH supply chain resilience becomes a priority and not a slogan?

WHAT THIS MEANS FOR SRH SUPPLIES AND SUPPLY CHAINS

Highlights from the study and the findings

Over the course of this work, we spoke with 50+ organizations and individuals around the globe and examined relevant quantitative stock and demand data from eLMIS and health management information systems in six countries. While reviewing perspectives and data, the following key points emerged:

Even with an “in-depth” analysis, it is difficult to ascertain which effects, especially stockouts, are COVID-related. We tried to assess the true source of disruption, but even some key informants were inconsistent in their attribution of disruptions to COVID-19 as opposed to pre-existing weaknesses (e.g., global supply constraints pre-dating COVID-19).

Our analysis purposely relied on countries where data were readily available. It is possible that countries with electronic data systems, such as these, may have stronger supply chains and have been able to respond better.

We did see signs of reduced demand for services during the acute reactive/crisis management periods (~2–4 months), which may have led to unintended pregnancies (a lagging indicator), but in many countries we saw an increase in FP product consumption immediately following the decrease, indicating a rebound of demand (corroborated by reports from SMOs).

Collecting and aggregating supply chain data from the six countries illuminated a number of challenges with data systems. These included the absence of reports showing trends for key indicators over time, and the lack of naming standards for products, units of measure, and categories of product families. These deficiencies hindered data cleaning and comparison.

Though by no means representative of all LMICs, the six countries from which we drew supply chain data suggested the following:

- There were no stockouts in the aftermath of the outbreak of COVID-19 that were clearly attributable to COVID. There were high levels of facility stockouts in Zambia, but they were also high before COVID, with several known underlying concerns.
- The absence of “unusual” stockouts in six countries we observed does not mean there were no COVID-related stockouts elsewhere.
- Our general understanding of the global context is that recovery from manufacturing delays and disruptions in freight, customs, and in-country distribution took 4–6 months.
- Our quantitative data end in Sept 2020. Insofar as stockouts are a lagging indicator of disruption and that supplies funding has been, and is being redirected to the COVID-19 response, we may see COVID-19 related stockouts in 2021.



WHAT THIS MEANS FOR SRH SUPPLIES AND SUPPLY CHAINS

The pandemic revealed underlying supply chain weaknesses that affect the capacity for responsiveness and suggest future risks

Though it appears SRH supply chains “made it through” the pandemic response in 2020, our research indicates that:

COVID-19 exposed new risks and amplified existing vulnerabilities for SRH products

- A limited and fragile supply of quality-assured SRH products creates unhealthy market conditions and limits resiliency.
- There is a limited supplier base and an over-reliance on a few geographies for many supplies.
- Available funding rather than demand often drives procurements.
- Crisis mode caused some actors to retrench to a non-coordinated, self-preservation mode (e.g., an initial piecemeal commitment to collaboration and coordinated response).
- Limited data visibility and data lags created uncertainty and knee-jerk responses.

COVID-19 exacerbated existing weaknesses in SRH supply chains

- Our supply chains are global: regardless of where a product is manufactured, almost all rely on materials and inputs produced in another country.
- Significant information lags and siloes in our supply chains and data systems created uncertainty and limited prospects for coordinated, informed or even rapid responses.
- Known gaps in data, especially for maternal and menstrual health products, were that much more apparent when trying to discern disruptions or risks.
- The drive towards lean supply chains and low-cost products increases dependency on a limited supplier base and increases the risk of disruption.

COVID-19 highlighted uncomfortable truths about which supply chain improvement initiatives to prioritize

- Slow and inefficient supply chains proved to have a protective effect, as high stock holdings allowed most countries to weather the immediate crisis without stockouts for many SRH products.
- Even in countries with electronic information systems, data were not always readily available to those who needed them or used to mitigate risks and inform decision-making.
- When an emergency strikes, response funding is rarely available at short notice, meaning that funds must be diverted from existing programs for procurement and supply chain functions.



WHAT THIS MEANS FOR SRH SUPPLIES AND SUPPLY CHAINS

Continued uncertainty affects supply chains for all health products

The pandemic continues with new variants of the virus emerging and ever evolving plans for vaccine development, introduction and rollout. Financing response efforts may very well come at the expense of overall public health systems. Costs across the system are higher as governments, companies, and organizations continue to grapple with the need to:

- Maintain social distancing measures (more shifts, additional operations costs).
- Assure PPE provision and procurement.
- Confront fewer and more expensive options for freight.

Increased costs will be passed along, resulting in overall higher costs along the supply chain.

As we saw in the aftermath of the global COVID-19 outbreak, SRH products will not necessarily be prioritized. Supply chains must be sufficiently resilient to withstand ~6 months of disruption as actions are taken to include SRH in global and national resilience and risk management plans. There is no guarantee the next disruption will look like this one, but a next disruption is guaranteed.

Mindset for achieving increased SRH supply chain resiliency:

1

Actions should promote longer-term resiliency, not just focus on the immediate crisis.

2

Resiliency is not the same thing as preparedness; it requires dynamic reassessment and continuous adaptation.

3

The “new normal” is a myth; we need to promote more responsive, flexible, and agile systems that are continuously adapting to changes big and small.



WHAT COMES NEXT

What comes next: Considerations for moving forward

When challenges emerged, adjustments were made, systems were resilient, workarounds identified, and problems solved. How can we institutionalize this agility in routine supply chain management practice, while strengthening systems to avoid the need for workarounds?

COVID-19 is ongoing. We have yet to see its full consequence, especially financial, on the availability of and demand for SRH products. How can we **monitor the ongoing, macro, and micro effects on the SRH supply chain** (e.g., increased costs at each step will eventually be passed on, further agility may reach a breaking point)?

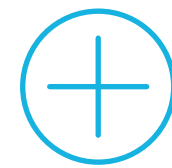
- What are the longer-term implications and risks of second and third waves of the pandemic and the COVID-19 vaccine on SRH supply chain?

We need to evaluate strategies to find the right balance between resiliency and efficiency (e.g., what level of risk-tolerance does the community have and what are we willing to invest to be prepared for the next disruption)?



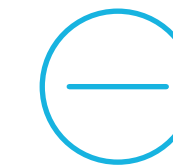
WHAT COMES NEXT

What we learned in 2020 will inform future SRH supply chains



Despite early disruptions and a diminished focus on SRH products relative to personal protective equipment (PPE), systems and supply chains were able to respond because of:

- Focused global attention on SRH products and donor responsiveness to increased costs that supported continuity in the flow and availability of products.
- Long and full pipelines for SRH products; most funding for 2020 procurement had already been committed and was part of firm purchase orders.
- Higher inventory levels plus short-term drops in demand that offset delays in global shipments, port closures, extended clearance times, etc.
- National policies that prioritized health services and included SRH as part of essential package of services and products.
- Human resiliency and problem solving that yielded adaptations and shorter disruptions.



But 2020 did highlight key weaknesses and risks to our SRH supply chains:

- Health supply chains are global; even products manufactured locally rely on material inputs from China and India. The geographic concentration of active pharmaceutical ingredients (APIs) and finished pharmaceutical manufacturing is a risk to global supply chains.
- Freight will not return to pre-COVID levels anytime soon. It will be more expensive and offer fewer options for years to come, becoming a bigger driver of cost and risk throughout the supply chain.
- Higher inventory levels, while frequently cited as inefficient, were in fact protective, compensating for weak systems, long procurement cycles, and data lags and gaps, showing that movement towards more lean practices may increase risks.
- The SRH community's commitment to choice requires understanding and responding to a variety of client needs, which may shift to different products or to any type of outlet, especially during a crisis.
- The provision of PPE and COVID-19 vaccines will remain a high priority for countries and could threaten the relative priority attached to SRH products and services in the coming years.



WHAT COMES NEXT

The crisis is now, but the aftershocks will continue for several years. Complacency is a risk.

To promote resiliency, the SRH community needs to implement strategies that address:



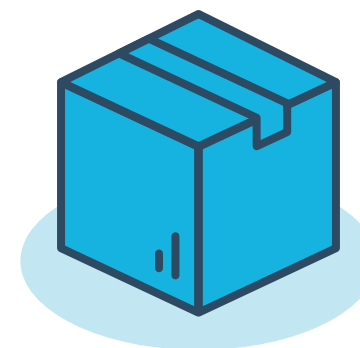
HEALTHY MARKETS

Product-specific market weaknesses and limited supplier diversity in numbers, products offered, and locations endanger product availability and client choice.



FINANCING

Increased product and freight costs, coupled with growing demand for COVID-related products (PPE and vaccines), jeopardize sustained public sector funding for SRH products and potentially the viability of the private sector SRH market.



SUPPLY CHAIN STRATEGY

The logistics environment has changed. Supply chain gains will be threatened if they return to pre-COVID strategies without rethinking sourcing, inventory, freight, and distribution systems and channels for products.



STEWARDSHIP, POLICY AND COORDINATION

Pandemic-related disruptions have made supply chains top-of-mind for many. Now is the time for public and private sector partners to actively commit to coordinated efforts to broaden equitable and reliable access to SRH products.



BETTER QUALITY AND USE OF DATA

Data weaknesses persist, even amidst the growth in electronic systems. COVID-19 has highlighted the need for more robust data systems that allow for rapid, informed decision-making and collaboration along the supply chain.

The SRH community should coordinate efforts across global and national level actors to support the following efforts to improve resiliency for SRH supply chains, and ultimately ensure continued widespread availability of SRH products:

HEALTHY MARKETS



Promote healthy SRH product markets by category and product

- Improve visibility into suppliers' supply chains to assess risks for specific products and product categories
 - Coordinate and share data across organizations to identify magnitude of risks and prioritize strategies to promote sufficient redundancy in the supplier base
 - Understand true risks and resilience opportunities of local and regional manufacturing for specific SRH product segments

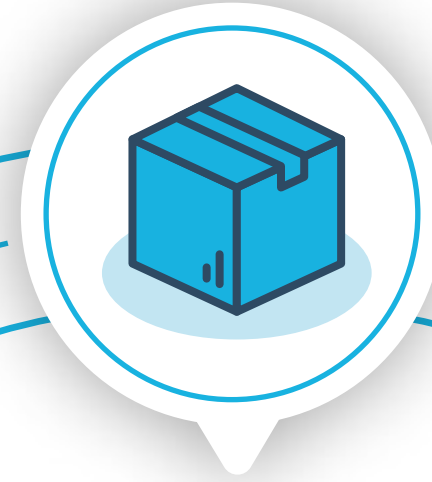
FINANCING



Secure sustainable SRH product and supply chain financing

- Forecast and fund PPE requirements to safeguard SRH services through the pandemic
- Assess funding gaps for SRH products and supply chains caused by reallocation to COVID response; mobilize required funding
- Assess opportunities for financing interventions to incentivize non-public distribution and provision of SRH products

SUPPLY CHAIN STRATEGY



Promote flexible and responsive supply chain strategies related to sourcing, inventory, freight, costs and risk

- Develop dynamic network models that allow ongoing analysis of the relative cost/risk of different scenarios related to warehousing, inventory, and distribution
 - Update sourcing and procurement strategies to minimize supplier risk
- Monitor impact of ongoing pandemic as well as COVID-19 vaccine rollout on SRH supply chains

STEWARDSHIP, POLICY, AND COORDINATION



Safeguard SRH supply by strengthening enabling environment, coordination

- Continue to elevate SRH so that relevant supply chain considerations are part of health policy design, strategy, and system decisions
- Strengthen mechanisms that support collaboration and whose scope can be expanded during supply chain disruptions
 - Develop and expand multichannel access points to support client choice and broader service provision

BETTER QUALITY AND USE OF DATA



Accelerate flow, access and use of data along SRH supply chain

- Strengthen systems to capture and promote availability of quality data to the last mile, improving data velocity
- Enhance systems' use of data and technology to more rapidly sense changes in demand and support rational redistribution of products
- Expand data systems to include private sector, maternal health, other non-FP products in order to better monitor and inform interventions to increase access in all sectors



RECOMMENDATIONS

Recommendations for Action

The SRH Supply Chain Resiliency recommendations propose broad functional areas of work required to systematically strengthen end-to-end supply chains to be more resilient now and in the future.

Here we provide further details. For each functional area, we outline: 1) the risk or opportunity identified and 2) the corresponding actions to take. The focus is on accelerating or optimizing those practices that worked well in 2020 and have the potential to improve resiliency while addressing those disruptions or weaknesses that pose the greatest threat in the short and long term.

The recommendations:

 **Address the unique constraints of SRH supply chains while also recognizing opportunities to break down silos and strengthen overall health supply systems.**

 **Tackle “big” challenges along the supply chain (from manufacturing to last mile) and across sectors. Not all are new ideas, but all do require concerted attention to make progress against both emerging and long-standing challenges.**

 **Are intended to be addressed in tandem rather than in a piecemeal approach that focuses on one element at a time or in isolation.**

 **Will require the support and coordination of stakeholders at all levels (global, national and local levels) and functions (donors, governments, procurers, technical assistance providers, advocates, private sector partners, etc.) of the supply chain.**

Some of the recommended actions are already in progress or planned by RHSC members and stakeholders, while others require new or leveraged investments. All require a new and radical commitment to coordination and transparency in order to be effective. The RHSC is uniquely positioned to guide and mobilize this coordination and transparency, monitor progress against the roadmap, and share findings and outputs so that the SRH supply chain community can build upon what is learned.

RECOMMENDATIONS



HEALTHY MARKETS

Promote healthy SRH product markets by category and product

 RISK IDENTIFIED

Concentration of and hyper-dependence on few sources of quality-assured API and finished pharmaceutical products for some SRH products (e.g. implants, injectables, oral contraceptives) hinder robust risk mitigation strategies and undermine the longer-term health of the market.

For other SRH products (e.g. maternal and menstrual health) different market weaknesses limit widespread accessibility and use (e.g. fragmented supply and demand, suppliers not incentivized to enter markets, etc.).

 RECOMMENDATION AND SPECIFIC ACTIONS TO TAKE

Improve visibility into suppliers' supply chains to assess risk and opportunities for products and product categories to diversify supply base

- Coordinate and share data across organizations to identify risks with supplies in terms of upstream supply chain diversity and dependencies, for both API and finished pharmaceutical products
- Assess magnitude of dependency risks by product and product category and identify and prioritize strategies to promote market health and sufficient redundancy in the supplier base
- Create and implement category and product-specific action plans to address market weaknesses, supplier diversity and promote overall market health

Assess opportunities for and limitations of local, regional manufacturing and supply interventions for specific SRH product segments, like maternal health, menstrual health products

- Landscape the current market opportunities for a subset of SRH products, considering demand, enabling policies, local and international manufacturing context, potential distribution channels
- Where a potential opportunity is identified for local/regional manufacturing, support market assessments, capacity building, and evaluation of options for technology transfer and investment

RECOMMENDATIONS



FINANCING

Secure sustainable SRH product and supply chain financing

 RISK IDENTIFIED

Funding flexibility was critical to avoid prolonged disruption. But government and donor budget redirection to COVID-19 response and associated increases in costs along supply chain, as well as funding insecurity in the private sector and overall economic downturn, jeopardize funding for SRH procurement and supply chains.

 RECOMMENDATION AND SPECIFIC ACTIONS TO TAKE
Mobilize and safeguard funding for SRH supplies/supply chain through the pandemic and recovery period

- Assess changes in client demand/use patterns, including potential decline in out-of-pocket expenditures and shifts in use to the public sector/free SRH products
- Estimate supply chain costs and forecast needs and budget for SRH products for next 2-3 years
- Coordinate funding from domestic, donor, and private sources, including blended financing; monitor commitments and allocations, identify gaps and advocate to mobilize emergency funding
- Based on potential shortfall and gaps, mitigate funding gaps and smooth erratic/unpredictable funding, explore role of credit
- Estimate needs and budget for on-going COVID-19 response, prevention (PPE, testing, etc.), and vaccinations as separate budget line to limit risk of diversion from SRH funding

Assess opportunities for financing interventions to incentivize non-public distribution and provision of SRH products

- Explore interventions to limit financial risk and expand access to financing (e.g. affordable loans, favorable credit terms, 3rd party guarantors) and reduce high tariffs and other restrictive financial policies

RECOMMENDATIONS



SUPPLY CHAIN STRATEGY

Promote flexible and responsive supply chain strategies related to sourcing, inventory, freight, costs and risk

 RISK IDENTIFIED

The focus on efficiency and cost has led to brittle supply chains that have struggled to adapt to rapid and systemic disruptions. COVID-19 has altered the landscape – freight and supply chain design will be a greater consideration and related data is not optimized for use.

- Freight options are more expensive and less reliable
- Countries/programs may over-order/increase inventory due to uncertainty
- Options for leaner supply chain practices should consider maturity and responsiveness

 RECOMMENDATION AND SPECIFIC ACTIONS TO TAKE

Design and implement more flexible and responsive supply chain strategies related to sourcing, inventory, freight, costs and risk

- Develop and use dynamic network models for ongoing analysis of the relative cost/risk of different scenarios related to warehousing, inventory, and distribution for different types of products
- Quantify risk of stockouts and model different freight, warehousing, inventory scenarios for different products, customers, and supply chain maturity levels
- Identify opportunities for greater collaboration, risk-sharing with warehousing and transportation networks across procurers and customers
- Update sourcing and procurement strategies to minimize supplier risk
- Review and update procurement policies to allow for multiple awards, increased sourcing resiliency
- Explore adoption of a common catalog of products across procurers
- Reinvigorate efforts for regulatory harmonization
- Use COVID-19 experience to update organizational SOPs and risk mitigation strategies

Monitor and manage impact of on-going pandemic as well as COVID-19 vaccine rollout on global freight and SRH supply chains

- Accelerate GFPVAN engagement with freight forwarders and other information to increase visibility and coordination of freight data
- Promote greater coordination among global procurers to identify opportunities for freight savings via shared charters or consolidation, for both emergency and non-emergency situations

RECOMMENDATIONS



STEWARDSHIP, POLICY, & COORDINATION

Safeguard SRH supply by strengthening enabling environment, coordination

 RISK IDENTIFIED

SRH continues to be an afterthought in or excluded during global and national policy and strategy design. As a result, SRH was not part of many existing emergency response plans and strategies; the pandemic resulted in reactive development of policies, waivers, and guidelines.

In 2020, the SRH community managed through the disruptions, but the initial response to the crisis was reactive and piecemeal; there were limited pre-existing mechanisms or plans to guide a coordinated response.

The pandemic has shown that service and supply delivery can adapt and change rapidly when needed. Demand for SRH services may continue to be affected or change permanently as the pandemic evolves; both programming and policy need to respond proactively to support continued access to SRH products.

 RECOMMENDATION AND SPECIFIC ACTIONS TO TAKE

Continue to elevate SRH so that relevant supply and supply chain considerations are part of broad health policy design, strategy, and system decisions from the beginning. Integrate SRH products and services into global and national emergency response plans, ensuring:

- Coordinated emergency response plans for future events include a comprehensive SRH portfolio
- Continued operations and provision of SRH services
- Funding flexibility and emergency reserve for procurement and provision of safety related products
- Inclusion of nonpublic sector distribution partners

Strengthen and invest in relationships and mechanisms that support routine collaboration and whose scope/mandate can be expanded if needed during supply chain disruptions

- Integrate global early warning and response processes within existing mechanisms (e.g. GFPVAN) to monitor sentinel indicators for SRH products to help forewarn of disruption and coordinate mitigation efforts
- Incentivize greater coordination and information sharing along supply chains to bolster “coopetition” and promote shared investment towards common objectives

Develop and expand multichannel access points to support client choice and evolving service provision

- Document use of direct to consumer (DTC) distribution, shifts to self-care, private retailers, multi-month dispensing, last mile solutions and other adaptations that were used during the pandemic to ensure access to health products
- Support and scale successful adaptations post-pandemic as part of multi-channel strategy to support self-care and increase routine and emergency access to SRH supplies and services

RECOMMENDATIONS



BETTER QUALITY AND USE OF DATA
Accelerate flow, access, and use of data along the SRH supply chain

 RISK IDENTIFIED

On-going challenges with data visibility for certain product groups limit efforts to improve availability and informed intervention, especially for:

- non-FP products at all levels
- private sector data

Continued advances in technology make routine data availability possible, yet continued concern around data quality and inflexible digital and paper based systems limit rapid and agile response to minimize risks and impact of disruption.

 RECOMMENDATION AND SPECIFIC ACTIONS TO TAKE

- Expand data systems to include private sector, maternal health, other non-FP products in order to better monitor and inform interventions to increase access in all sectors**
- Maternal Health and essential medicines – Develop coordinated guidance and support to include MH products more fully in SCM activities and visibility (e.g. forecasting support, inclusion in supply plans, eLMIS, GFPVAN)
 - Menstrual health and other consumer products – Identify mechanism for monitoring product movement, availability, and pricing of consumer-based products
 - Develop systems to collect/aggregate private sector/total market data, including increased visibility of import and export data
- Invest in data systems, data visibility, and data use to improve quality and be able to sense changes in demand more quickly and adjust to changes and respond to disruptions.**
- Strengthen electronic systems to capture and accelerate the availability of quality data to the last mile
 - Review systems and access/use protocols to promote greater data utilization among those who need it for rapid decision-making across levels
 - Promote widespread adoption of standardized product names and categories (e.g. build on current initiatives to implement GS1)
 - Support governments with digitization of processes to support electronic, seamless movement of goods, including transition to single window service



APPENDICES

Appendix A: List of Products Considered

CATEGORY	PRODUCT
FAMILY PLANNING	EQUIPMENT FOR FEMALE STERILIZATION
FAMILY PLANNING	EQUIPMENT FOR MALE STERILIZATION
FAMILY PLANNING	MALE CONDOMS
FAMILY PLANNING	FEMALE CONDOMS
FAMILY PLANNING	CYCLE BEADS®
FAMILY PLANNING	COMBINED-ORAL CONTRACEPTIVE PILLS
FAMILY PLANNING	PROGESTIN-ONLY CONTRACEPTIVE PILLS
FAMILY PLANNING	DMPA-IM (INJECTABLE CONTRACEPTIVES: I.E. DEPO PROVERA)
FAMILY PLANNING	DMPA-SC (INJECTABLE CONTRACEPTIVES: I.E. SAYANA PRESS)
FAMILY PLANNING	1 ROD, 3 Y CONTRACEPTIVE IMPLANTS (I.E. NEXPLANON)
FAMILY PLANNING	2 ROD, 5 Y CONTRACEPTIVE IMPLANTS (I.E. JADELLE)
FAMILY PLANNING	2 ROD, 3 Y CONTRACEPTIVE IMPLANTS (I.E. LEVOPLANT)
FAMILY PLANNING	IUDS
FAMILY PLANNING	EMERGENCY CONTRACEPTIVE PILLS
FAMILY PLANNING	NET-EN (INJECTABLE CONTRACEPTIVE)

CATEGORY	PRODUCT
MATERNAL HEALTH AND ABORTION SERVICES	MISOPROSTOL
MATERNAL HEALTH	OXYTOCIN FOR INJECTION
MATERNAL HEALTH	MAGNESIUM SULFATE
MATERNAL HEALTH	CALCIUM GLUCONATE
MATERNAL HEALTH	CHLORHEXIDINE TUBE
MATERNAL HEALTH	FERROUS SULPHATE/FOLIC ACID
ABORTION SERVICES	MIFEPRISTONE
ABORTION SERVICES	COMBI-PACK (MIFEPRISTONE AND MISOPROSTOL)
ABORTION SERVICES	MVA TECHNOLOGY
STI-RELATED	HIV TEST KITS
STI-RELATED	PREGNANCY TESTS
MENSTRUAL HYGIENE PRODUCTS	SANITARY PADS (DISPOSABLE)
MENSTRUAL HYGIENE PRODUCTS	SANITARY PADS (REUSABLE)
MENSTRUAL HYGIENE PRODUCTS	MENSTRUAL CUPS



APPENDICES

Appendix B: List of Indicators and Data Availability

INDICATOR	COUNTRY	LEVEL	PRODUCT CATEGORIES	PERIOD	SOURCE	SECTOR
STOCKED ACCORDING TO PLAN	ETHIOPIA	REGIONAL HUBS	MA, FP, MH	JAN 2020 TO AUG 2020	KPI DASHBOARD	PUBLIC
% STOCKOUT	ETHIOPIA	CENTRAL AND HUBS	MA, FP, MH	JAN 2020 TO AUG 2020	KPI DASHBOARD	PUBLIC
	KENYA	SDPS	FP	JAN 2019 TO JUN 2020	KHIS	PUBLIC
	INDONESIA	SDPS	FP	JAN 2019 TO OCT 2020	FACILITY REPORTING SYSTEM	PRIVATE AND PUBLIC
	ZAMBIA	SDPS	MA, FP, MH	JAN 2019 TO AUG 2020	ELMIS	PUBLIC
ORDER FILL RATE	ETHIOPIA	CENTRAL AND HUB	MA, FP, MH	JAN 2019 TO SEP 2020	KPI DASHBOARD	PUBLIC
	KENYA	COUNTY	FP	JAN 2019 TO SEP 2020	KHIS	PUBLIC
ORDER LEAD TIME	ETHIOPIA	CENTRAL TO HUBS	MA, FP, MH	JAN 2019 TO AUG 2020	KPI DASHBOARD	PUBLIC
CONSUMPTION AT SDP, ISSUES AT HIGHER LEVELS; ABLE TO EVALUATE STOCK STATUS FOR ALL BUT INDONESIA	BANGLADESH	NATIONAL	FP	JAN 2019 TO OCT 2020	ELMIS	PUBLIC
	ETHIOPIA	CENTRAL AND HUBS	MA, FP, MH	JAN 2019 TO AUG 2020	KPI DASHBOARD	PUBLIC
	INDONESIA	SDPS	FP	JAN 2019 TO OCT 2020	FACILITY REPORTING SYSTEM	PUBLIC AND PRIVATE
	KENYA	KEMSA AND SDPS	FP	JAN 2019 TO SEP 2020	KHIS	PUBLIC
	PAKISTAN	NATIONAL	FP	JAN 2019 TO OCT 2020	ELMIS	PUBLIC AND PRIVATE
	ZAMBIA	CENTRAL AND SDPS	MA, FP, MH	JAN 2019 TO SEP 2020	ELMIS	PUBLIC



APPENDICES

Appendix B: List of Indicators and Data Availability

INDICATOR	COUNTRY	LEVEL	PRODUCT CATEGORIES	PERIOD	SOURCE	SECTOR
ORDER COMPLIANCE	ETHIOPIA	CENTRAL	AGGREGATED	JAN 2019 TO SEP 2020	EPSA	PUBLIC
DEMAND FOR SERVICES	KENYA	CENTRAL AND COUNTY	FP: MCPR, METHOD MIX, STERILIZATIONS, LARC REMOVAL, PREGNANCY TESTS, ADOLESCENT PREGNANCY	JAN 2019 TO SEP 2020	PMA, MAISHA MEDS, KHS	PUBLIC AND PRIVATE
REPORTING RATES AND ON-TIME REPORTING RATES	KENYA	CENTRAL	AGGREGATED	JAN 2019 TO SEP 2020	KHIS	PUBLIC
	ZAMBIA	CENTRAL	AGGREGATED	JAN 2019 TO SEP 2019	ELMIS	PUBLIC
MONTHS OF STOCK	BANGLADESH	SYSTEM	FP	JAN 2019 TO OCT 2020	ELMIS	PUBLIC
	ETHIOPIA	CENTRAL AND HUB	MA, FP, MH	JAN 2019 TO AUG 2020	EPSA	PUBLIC
	KENYA	CENTRAL AND FACILITY	FP	JAN 2019 TO SEP 2020	KHIS	PUBLIC
	PAKISTAN	SYSTEM	FP, MH	JAN 2019 TO OCT 2020	ELMIS	PUBLIC
	ZAMBIA	CENTRAL	FP	FEB, APR 2019 AND APR, AUG, SEP 2020	CENTRAL REPORTS	PUBLIC
		FACILITY	FP, MH, STI	JAN 2019 TO AUG 2020	ELMIS	PUBLIC



Appendix C: Notes on Quantitative Data Analysis

Data for each indicator were reviewed as a sum, by SRH product category (i.e., MA, FP, MH, and STI) and by product. FP data were considered and assessed in several ways: products were categorized as either LARCs and STMs, and by CYP factors. For Kenya, where COVID-19 treatment guidelines included injectables with LARCs, this segmentation of LARCs with injectables and STM without injectables was reviewed as well.

Analysis included:

- Reviewing mean, min, max, range, and standard variation of periods: pre-COVID (Jan 2019–Feb 2020); and during COVID (March 2020 to August–October 2020, depending on the period when data was available).
- Reviewing seasonality between 2019 and 2020 along above segments for potential patterns.
- Reviewing geographic/regional variations (provincial, county, hub, etc.) along above segments to assess whether location was a determinant in potential variances.

APPENDICES

Appendix D: COVID-19 response timeline and context for 3 focus countries



ETHIOPIA



KENYA



ZAMBIA



1ST CASE

March 13th, 2020

March 12th, 2020

March 18th, 2020



GUIDELINES & POLICIES

- MOH RMNCHAYN COVID-19 Response and Impact Mitigation Plan developed and implemented in April

- MOH COVID-19 RMNCH Guidelines developed and disseminated in July

- No RMNCH policy changes implemented
- Travel restrictions implemented through the Public Health Act in March



LOCKDOWNS

- School closures and ban on public gatherings ●●●
- No official lock down or curfews put in place.

- School closures and ban on public gatherings ●●●●
- Nationwide curfew imposed ●●●●

- Schools and miscellaneous gathering places closed ●●●●
- Two districts under brief lockdown ●



AIRPORT AND PORT CLOSURES

- Land borders open only for the flow of essential goods and cargo ●●●
- Land borders closed to travelers ●●●
- Domestic transportation reduced to 50% capacity ●●●

- Crew from cargo vessels, aircraft, and ships must quarantine upon arrival ●●
- Movement restricted between select metro areas and counties ●●
- International and domestic flights banned ●●

- Non-essential travel suspended. International travel restricted to Lusaka airport ●●
- Land border entry restricted, with mandatory 14-day quarantine upon entry to the country ●●

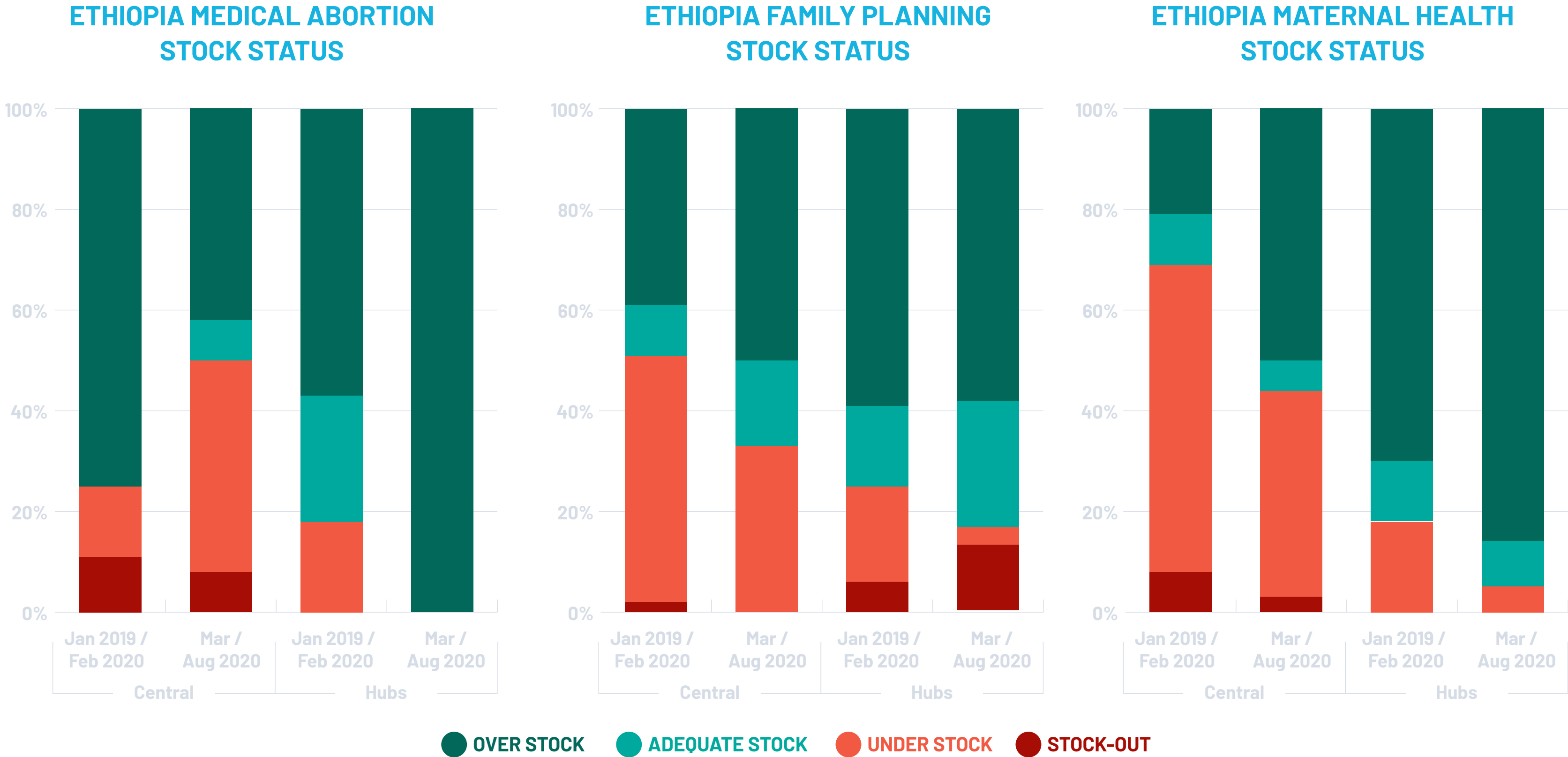


APPENDICES

Appendix E: Closer review of national stock status data indicates that inventory management practices helped maintain product availability for clients

Inventory management parameters are set to ensure sufficient buffer to account for lead times and demand volatility. During disruption, national stock levels can help mitigate delays by moving (either proactively or reactively) stock to facilities to ensure availability for clients. Comparing pre-COVID-19 (Jan 2019–Feb 2020) stock status data in Ethiopia to the disruption analysis period (Mar–Aug 2020) shows that across categories, the number of products stocked out or under-stocked was lower at the hub than central level, meaning stock was being held at lower levels and more accessible to facilities.

In all three categories (MA, FP, MH) in Ethiopia, stock status was on average better at hub than central level and improved after Feb 2020. The same was evident with the Kenya FP program (not shown).



Data note: Stock status % by category represents the number of products within each stock status by month, on average, across each time period.



APPENDICES

Appendix F: Acronyms

API	ACTIVE PHARMACEUTICAL INGREDIENT
COC	COMBINED ORAL CONTRACEPTIVE
COVID-19	SARS-COV-2
CYP	COUPLE-YEARS OF PROTECTION
DHIS2	DISTRICT HEALTH INFORMATION SOFTWARE 2
DMPA-IM	DEPOT MEDROXYPROGESTERONE ACETATE-INTRAMUSCULAR
DMPA-SC	DEPOT MEDROXYPROGESTERONE ACETATE-SUBCUTANEOUS
ELMIS	ELECTRONIC LOGISTICS MANAGEMENT INFORMATION SYSTEM
EPSA	ETHIOPIAN PHARMACEUTICAL SUPPLY AGENCY
FP	FAMILY PLANNING
GS1	GLOBAL STANDARDS
HEW	HEALTH EXTENSION WORKER
HIS	HEALTH INFORMATION SYSTEM
IPC	INFECTION PREVENTION AND CONTROL
IUD	INTRAUTERINE DEVICE
JSI	JOHN SNOW, INC.

KEMSA	KENYA MEDICAL SUPPLIES AUTHORITY
KPI	KEY PERFORMANCE INDICATOR
LARC	LONG-ACTING REVERSIBLE CONTRACEPTION
LMIC	LOW- AND MIDDLE-INCOME COUNTRY
LMIS	LOGISTICS MANAGEMENT INFORMATION SYSTEM
MA	MEDICAL ABORTION
MH	MATERNAL HEALTH
MOH	MINISTRY OF HEALTH
PPE	PERSONAL PROTECTIVE EQUIPMENT
RHSC	REPRODUCTIVE HEALTH SUPPLIES COALITION
SDP	SERVICE DELIVERY POINT
SMO	SOCIAL MARKETING ORGANIZATION
SOP	STANDARD OPERATING PROCEDURE
SRH	SEXUAL AND REPRODUCTIVE HEALTH
WHO	WORLD HEALTH ORGANIZATION

APPENDICES

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