1 Introduction
In September 2020, WHO, with the advice of the CSCS Task Force, commissioned an assessment of the Covid-19 Supply Chain System (CSCS) focused on three main areas: strategy, implementation and moving forward. The assessment consisted of a desk review (including interviews with key resource persons), a survey with more than 100 responses, approximately 30 interviews with key stakeholders and a quantitative data review. Pressure-tested with a Joint Steering Group and several stakeholders, the analysis provides lessons learned and recommendations for the future.

2 Context
The CSCS was established during an unprecedented time. The world was facing a novel pathogen, the scope and spread of which was unknown in the beginning of 2020. WHO declared a Public Health Emergency of International Concern on 30 January and a Global Pandemic on 11 March. The UN and public health partners took early action to ensure access of life-saving supplies, notably PPE and test kits in February-March, notably WHO and UNICEF. The UN Crisis Management Team (CMT) convened in mid-February, from which the concept and structure of the CSCS matured. The CSCS started in March and was fully launched in end April.

The CSCS brought together UN agencies, donors, vendors and NGOs to improve access to critical, life-saving Covid-19 supplies. The CSCS had two main objectives: i) sourcing and allocating essential Covid-19 products for IPC (PPE), clinical support (Biomedical products) and testing (Diagnostics), and ii) delivering these products via a virtual and physical supply chain leveraging humanitarian air services.

It used three core strategies: consolidated demand and allocation, coordinated purchasing, and streamlined delivery. The CSCS set-up was comprised of: an interagency Task Force that provided strategy and oversight, three Purchasing Consortiums (PPE, Biomedical, Diagnostics), and a Control Tower that provided the operational backbone, the systems and tools, and coordinated delivery.

3 Findings
The CSCS established and implemented a global strategy to help with access to critical and life-saving Covid-19 supplies. Low- and middle-income countries accessed approximately 50% of their Covid-19 supplies via the CSCS.

It tapped the collective capabilities of the global public health partners and the UN, including on market facing negotiations, procurement, delivery, and financing. There was a multi-lane approach to procurement, utilizing the health procurement assets of UN agencies, the Global Fund, the Gates Foundation, and CHAI. PAHO was the only regional procurement body.

There was also a multi-lane approach to delivery, which maintained open corridors to deliver supplies during 2020. More than half of over 4,500 deliveries and more than 60% of volumes transported were managed via the WFP hub and spoke system designed for the CSCS. The WFP transport service for cargo and passengers was noted by NGOs as a “game changer,” and they may not have been able to continue their programmes without this support.

The culture and atmosphere during peak constrained periods were negative at times – seemingly due to a lack of agreement on strategy and roles, and organisational interest. Visibility on who was buying-what-for-whom and coordination were weak. Key interventions by partner leadership and a shared commitment were key, and the CSCS created inclusive information exchange forums in the midst of healthy and sometimes unhealthy competition between organisations/buyers. All three Purchasing Consortia were operational from March/April through the end of the year and were able to acquire large volumes of PPE, biomedical supplies and diagnostics. The buyers secured some of the lowest prices in the market. Some of the largest challenges were a global collapse of the diagnostics market and quality assurance of PPE supplies. Lead times were a matter of days and weeks in February-April and months thereafter. Each Consortium functioned differently against the original plan, which is due to multiple factors, such as market dynamics, strategy, allocations, and communication.

Quantification of the CSCS, 2020

- $1.091 million Covid-19 supplies for 184 countries
- 46% PPE, 41% diagnostics, 13% biomedical supplies (based on $ value)
- 1,023 million units of PPE were supplied to 169 countries
- 71 million diagnostics tests/kits were supplied to 161 countries
- 58,246 oxygen concentrators to 127 countries (mostly to LIC, LMIC)
- 3,462 ventilators to 84 countries (approximately half were UNMIC)
- Of the 184 countries, 29 were low-income and received 26% of the supplies, 51 were lower-middle and received 37% of the supplies, 57 were upper-middle and received 31% of the supplies, and 47 were high-income countries and received 6% of the supplies.
- UNDOS and IOM procured supplies for UN and peacekeeping staff.
While delivering large volumes of life saving supplies to countries, the CSCS fell short in some important areas of implementation, such as coordinated end-to-end supply chain strategy, allocation, communication, data and lead-times. In addition, the limited operational link to the pandemic response left space for other priorities to be the determinate for key decisions. It is difficult to assess if “equitable access” was achieved, due to different views on the definition of “equitable.”

4 Could be ‘Better if’

Based on the findings and analysis, a number of “Better ifs” have been identified, which could be applied to continued pandemic response, or in preparation for a future response. These include:

- Be pandemic response led, in particular around product guidelines (specifications, use-case, QA/QC), demand forecast and allocation of scarce supplies.
- Include Regions and Countries in design, empower regional and local procurement mechanisms and sources of supplies.
- Include public health partners, UN agencies and NGO/CSO in design.
- Build a country-facing platform including by connecting to partner platforms and engaging national governments and regional institutions
- Define data needs for visibility of a supply chain operation, market situations, and multi-directional information flow. Use data to drive performance and support decision-making.
- Create a playbook on roles and a system to coordinate, including data sharing compacts, SOPs, and a plan for Duty of Care of humanitarian staff.
- Tighter coordination of the multi-lane approach and visibility to countries and partners.
- Financing:
  - To secure quantities of new products, provide volume guarantees
  - To help with continued speed of response, potentially establish (expand and extend) bridging mechanisms so more buyers can procure while their regular funding materialises.
  - Create a sufficient pool of core funding for products in limited supply, so that country allocations can better be based on needs over funding availability.
- Establish market-tailored strategies to access critical supplies. Specifically: i) carry the authority of pandemic-response leadership in the engagement with the pharma-medical industries – link access terms to actual procurement and take a holistic look at demand-supply, and ii) establish clear QA/QC and protocols for the rapid scale-up of PPE production (or other less regulated, commodity markets), that are shared between buyers.
- Build out basic medical oxygen needs in LIC and LMIC

5 Conclusion

Throughout the assessment it was clear that the majority of respondents believe a CSCS approach was needed and should be continued and adapted for the future. Applying the lessons learned from the CSCS, a future set-up could include:

A mechanism that builds on a “playbook” (including roles, responsibilities, data needs, etc.), developed in advance with countries, regions and partners, and preparedness measures (e.g., strategic inventory) that can be adapted based on the pathogen and scope of the outbreak. The mechanism should be prepared to:

- Provide a rapid response cushion of supplies for a 2-3 month period, via a combination of regional, country and global actions, based on strategic preparations;
- Maximise access thereafter by empowering regions, countries and partners by setting goals and providing visibility on country needs, coordinated supply chains, and global market situations; and,
- Stay pandemic-led on allocations of scarce supplies, specifications, use-case definitions, and negotiations with markets at key moments.

A global overview of evolving market situation of key, essential products to provide all countries information on global and regional markets, with real-time situation updates to inform how they approach markets, keep apprised of market challenges and support decisions on local manufacturing.

Finally, WHO has an important role to play in the initial rapid response. After which, WHO should continue to leverage its operational leg in maximizing access, while leaning into its leadership role for demand and allocations, overseeing a coordinated supply chain that provides and uses data for all, and providing visibility on global market situations on essential pandemic supplies.