

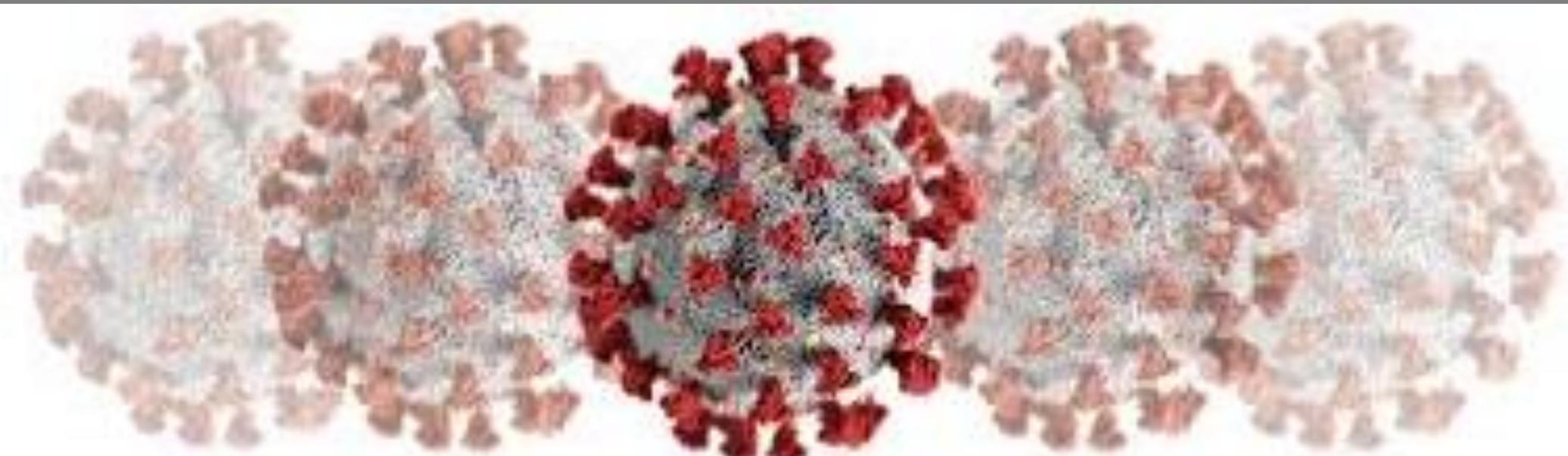


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Global Coordination Requirements for Covid-19 and Future Pandemics

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May 2020





To fight Covid-19 over the long-term, society needs to adapt. This requires effective global coordination

01

Covid-19 is here for the foreseeable future, so we need to learn to live with it.

Covid-19 is not like the flu, where the virus strikes in waves. This virus hits hard and overwhelms health systems. Multiple outbreaks will likely continue around the world as suppression measures are eased.

02

Our societies need to become Covid-ready.

We need to transform the ways we live, work, travel and socialise and the places in which we do these. We must brace ourselves to make these changes over the longer-term, not just over the short-term.

03

Behaviour adaptation by people will be essential.

The level of behaviour change required by individuals will be massive and unlike anything encountered in response to any health crisis in modern times.

04

Society as a whole must adapt, and so must global leadership.

We need to be able to test rapidly (within a few minutes) and humanely isolate people who test positive and their contacts. We need to adapt airlines, work, living spaces, social spaces and schools. And we need to increase health-sector capacities to be able to cope with future outbreaks.



This needs global coordination and a revised global architecture

This document presents five major global coordination challenges in pandemic response that have become clear. It presents the learnings of global coordination in three recent crises and proposes practical solutions to the global coordination architecture, both immediately and in the coming years. This document has seven sections:





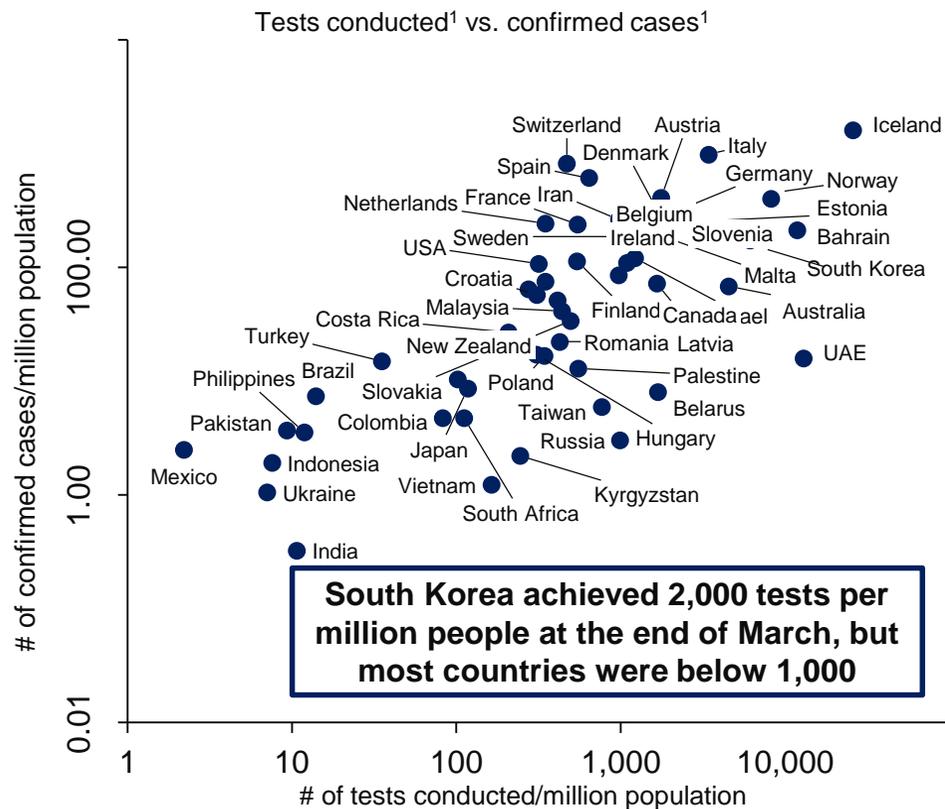
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1. Surveillance & Control



We need rapid-result testing to allow rapid isolation. Many countries have struggled with limited testing capacity of any speed

Testing rates globally as of end of March



Countries face shortages to mass testing and tracing

- **Mexico** had only tested 635 people per million at the end of April.
- **Turkey** exported 500,000 kits to the USA but then bought 2 million tests from China due to poor supply.
- **Nigeria** had tested only 76 people per million by the end of April and has only 18 labs. The country has 60,000 tests in storage now but needs 4 million over the next six months.
- **Mozambique** has only conducted 72 tests per million. While it has more kits, it lacks lab capability to conduct more.
- **Malaysia** bought tests from South Korea after a spike in cases and received a donation from the IAEA but was still only reaching 5,200 tests per million at the end of April.
- **Africa's CDC** is only distributing 200,000 test kits across the whole continent.



Global testing and tracing capacity are hampered by three barriers

01

Narrow focus

Many countries are developing domestic testing capacity based on assumptions of their own needs, removing an incentive for global coordination and leaving other countries behind. Some countries have stronger bioindustry bases to draw from, such as Germany and South Korea.

- The Australian chief medical officer (CMO) blamed supply issues on the fact that “countries where [tests] are made have export controls to keep them for their own use”.
- There is a lack of suitable de-risking for R&D and scale-up financing on rapid-result tests that can be made available globally.
- The supply of test kits needs holistic planning to be supported by personnel, and laboratory space with expertise for follow-up tracing.
- **Global support needs to bridge the gap across the supply and implementation chain, and set a common agreed test standard.**

02

Regulatory barriers

Medical tests and some tracing apps are subject to domestic regulatory approval. This can slow the use of tests produced abroad. Some domestic regulators have not approved private labs for testing. Mass production leads to gaps in quality.

- 102 Chinese firms are licensed to sell tests to Europe, but only 13 EU firms can sell to China. One Chinese firm can sell to America.
- China exported 5.5 million tests to Spain but these were withdrawn from use after significant concerns over quality.
- **Developed-country regulators need to coordinate approvals, and support developing economies to prevent faulty imports.**

03

Demand & supply mismatch

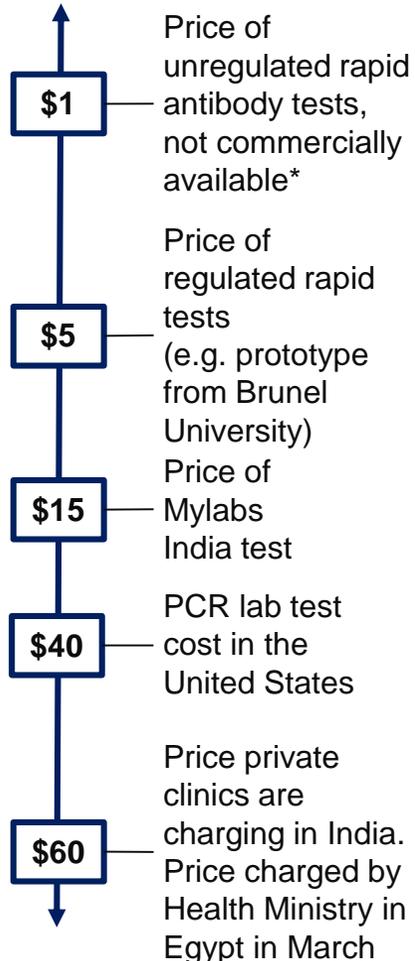
There is no accurate picture of global demand or supply. We lack international definitions of equitable access.

- Demand is reliant on government policies, not always need.
- Equitable distribution of testing capacity could be done per capita based on factors such as health-system strength, risk, size of vulnerable population, GDP, or others.
- **International organisations need to broker requests and supply for an accurate, and real-time picture of need.**



Pricing, reputational risks and lack of tracing technology transfer create further barriers to rapid-isolation capability at a global level

Pricing & quality mismatch



Risks of lower regulatory barriers



- The US Food and Drug Administration (FDA) will now not object to development and distribution of tests in the US providing they meet certain criteria before official approval.
 - Emergency Use Authorisations, with lighter import checks, will increase supply from South Korea and Switzerland.
- 
- Chinese company Shenzhen Bioeasy Biotech exported more than 50,000 faulty test kits (~30% accuracy) to Spain. Replacement tests also proved faulty and Spain asked for a refund.
 - The Dutch Health Ministry recalled 600,000 masks shipped from China on 21 March after they were found to be defective; Turkey rejected shipments due to substandard test margins.

Best tracing practices not applied globally



- In China, a **contact-tracing app** could be used in developing countries but isn't.



- In South Korea, extensive tracing of infected individuals being carried out via GPS, credit-card transactions and apps.
- The **Corona 100m app** uses government data and alerts users who come within 100 metres of a location visited by an infected person.
- The **Coronamap** site shows travel histories of confirmed patients.



- Taiwan's "**electric fence**" uses phone signal to identify locations.
- An alert is sent to the authorities if the handset is turned off for 15 minutes.
- More than 6,000 people in home quarantine are tracked this way.



- Singapore's **TraceTogether app** uses Bluetooth to track and notify people who have come into contact with those infected. It only stores mobile numbers and an anonymised ID. Countries like Australia and Vietnam have launched similar apps.

Source: <https://ourworldindata.org/covid-testing>

1. Only includes countries with available data on # of conducted tests



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2. Access to Equipment



We need to be prepared for outbreaks anywhere, so equipping health sectors around the world is essential

Critical-care capacity is almost non-existent in many countries. Imperial College estimates that at least 2,000 to 5,000 people per million inhabitants in low-income countries could require critical care. Up to 76 million medical gloves are needed globally and 1.6 million goggles are needed per month, according to the WHO.

Country cases	Issue
India	India's availability of hospital beds has fallen since 2015, with only 0.53 available per 1,000 people. However, India has 5.2 ICU beds per 100,000 people, similar to Sweden (5.8).
Burkina Faso	The president asked the global community for 6 million gloves, 3 million masks and 10,000 PPE suits, but it did not hear back promptly. The country ran out of isolation space and used hotels.
Nigeria	The country only had 31,000 PPE suits in early April but needed 300,000 for just one month.
Thailand	In March Thailand ordered 400,000 masks and 400,000 PPE suits to meet its needs for just one month.
South Africa	The country has only one critical-care bed available for every 48 people who are likely to need it at any one point in time in the next six months.
Mexico	Mexico has only 1.2 ICU beds per 100,000 people – one-sixth of the UK availability – and only 2,050 ventilators for a population of 129 million.
Mozambique	Mozambique is estimated to have six ventilators in public hospitals and 28 in private hospitals, for a country of 30 million people.



Lack of global coordination is leading to equipment seizures

A lack of coordination and a “nation first” approach is fraying diplomatic relations. There are reports of countries seizing equipment destined for elsewhere. Countries from Kazakhstan to Vietnam, Serbia to India, are banning exports.

Examples of reported, unconfirmed cases of equipment seizure

Czech Republic 	Italy 	USA 	France Germany 	Turkey 	Italy Belgium 	Kenya 	Germany 
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- On 22 March, Officials in Prague seized 110,000 face masks en route from China to Italy, as part of a seizure of 630,000 products.
- Masks were seized as the exporting company involved tried to raise prices on arrival, according to the Czech interior minister.
- The move strained European relations, but the Czech foreign minister has since sent 110,000 masks of its own stock while the investigation is ongoing.
- On 3 April, US buyers paid in cash on the airport tarmac for masks from China destined for France, offering three times the original price. Canadian and Brazilian governments raised similar warnings.
- On 4 April, the US diverted a shipment of masks from Thailand intended for Germany after outbidding other countries. Berlin's interior minister accused the US of “modern piracy”.
- After initially exporting large amounts of equipment, Turkey experienced a shortfall and banned exports.
- On 16 March, *Le Soir* and *Corriere della Sera* reported Turkish-made masks, paid for, had not arrived in Belgium or Italy.
- On 24 March, the German Defence Minister confirmed an order of 6 million masks from Kenya was missing.
- Neither Germany nor Kenya could confirm what had happened, or whether the masks had been stolen.



Global coordination failures in sourcing medical equipment

01

Export barriers

Nation states and blocs are turning inwards, for example with some PPE-producing nations imposing export bans.

- 4 out of the top 5 exporters of PPE introduced de facto export bans, while 84% of health equipment imported to least-developed countries is from G-20 economies. Shipping capacity is also limited.
- There is a lack of support to countries and trade blocs to scale up local production when they're unable to import and to procure when possible.
- **The UN Secretary General has called for removal of trade restrictions on pandemic equipment.**

02

Production

Developed-country governments are placing urgent orders for equipment such as ventilators and PPE with suppliers and seeking alternative options.

- Ventilator production relies on complex international supply chains for components. If production is interrupted by shutdowns, this will hamper production.
- There are further problems of distribution, as most African countries have very few units.
- **Global coordination could focus on production capacity in different regions and the development of scalable alternative designs.**

03

Mobile units

Some countries have mobile capabilities, such as mobile labs, hospitals and isolation units, but these are not being planned in many countries that need them.

- Countries need support to augment their core capability of key health-care space and equipment.
- **This requires a clearing mechanism for countries with such capability, for example China and South Korea, to build them in critical countries.**



While some countries and blocs can adapt their industrial sectors quickly, others do not have local production capability



China

The government: 1) **centralised coordination** of production, transportation and use of essential products; 2) **requisitioned production capacity** for essential equipment; 3) encouraged the introduction of **new production lines** and committed to purchasing excess production; 4) procured supply from private and public sources overseas; 5) mobilised the international Chinese community to donate.



United States

The FDA has relaxed its import standards by: 1) recognising the **standards of other countries** (e.g. Australia and Japan) and 2) asking all export suppliers to attach **test results** that could pass FDA standards without having to be tested by the FDA. Carmakers **GM, Ford and Tesla** are repurposing parts of their production lines to help with ventilators and mask supply.



EU

The governments of Italy and the UK asked automakers, appliance makers and aerospace manufacturers to ramp up production of vital medical hardware such as ventilators and masks by **repurposing available parts**. The UK government also summarily **approved a simple ventilator prototype** for mass domestic production to address a massive shortage of ventilators in hospitals.

But many other countries struggle to:



Assess current equipment stocks and prioritise needs based on anticipated rate of transmission and standards requirements.



Understand supply chain and strategise based on scenario-planning and affordability (worst/best case, ratios of equipment per population).



Retool their limited manufacturing capability and contact development partners, foreign governments, and/or reputable suppliers to place orders.¹



Develop **safety guidelines** and facilitate **training of health-care workers** on specific equipment, including oxygen-therapy training.



Coordinate partners, attract investment and organise themselves in production trade blocs to lobby against export restrictions.



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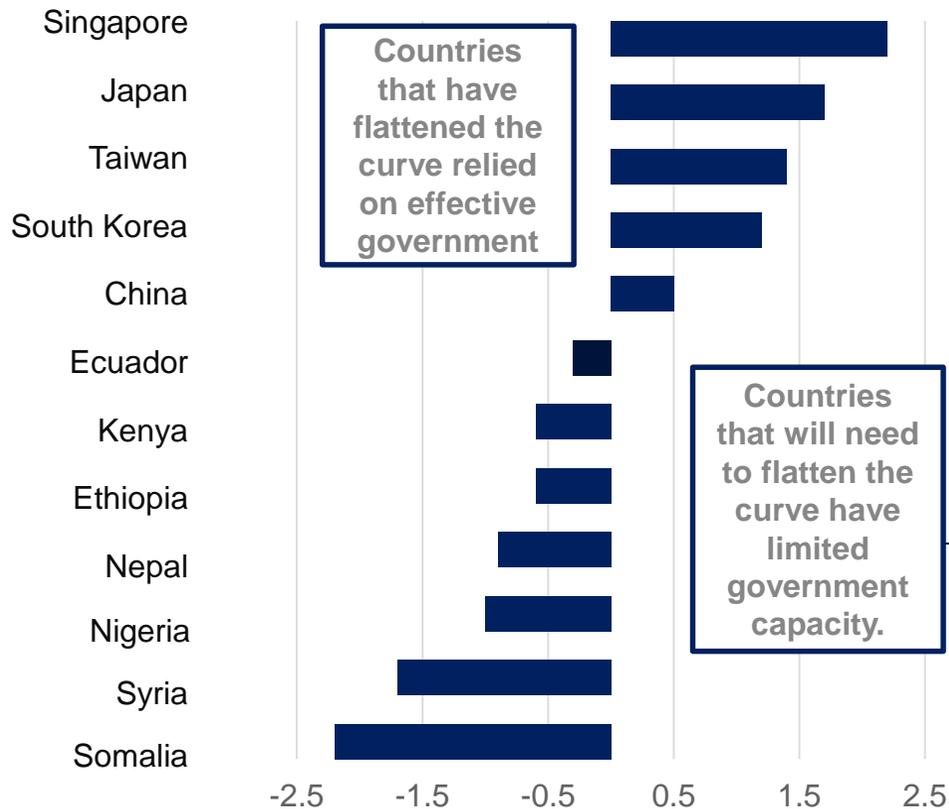
3. Standing Up Crisis Response Command Structures



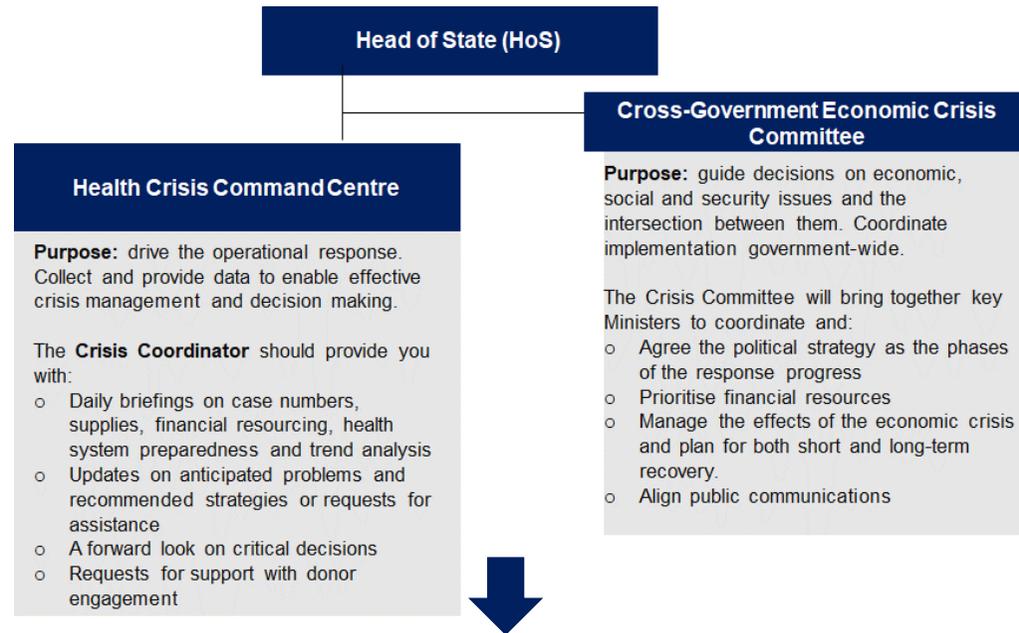
Ending the pandemic depends on effective crisis management by governments around the world

Government capability varies significantly

Effective Government Score (-2.5 to 2.5)



The most critical part of every government now – especially those with weak health systems – is a response **command structure** that allows a strong handling of both the health and economic responses, **simultaneously**. Strong inter-governmental coordination is the key to success.



These countries need global support to set up such a command structure under the authority of the Head of State and need the right skilled personnel to solve problems and make progress.



Developing-country governments face three critical challenges to setting up effective crisis-response structures

01

Struggling to set up response command centres due to lack of management capability



- Some countries have no practical support on their response and their command structure, e.g. **Mali, Gambia, Malawi**.
- **Nigeria** is struggling to coordinate its 10 sub-committees under its structure, and as various players push for access to resources, economic sub-committees are weak and add pressure to health side.
- **Kenya** has established its structure but lacks a donor coordination mechanism so that donors with funds and equipment can align.
- **India, Nigeria and Kenya**, depend on state level implementation and capacity varies significantly, leading to inconsistent approaches. And they are struggling to have their cash transfer programmes reach the people they need to for lockdowns to work.

02

A lack of practical advice to quickly learn what's working or can work so they can roll out their health and economic response



- **Mozambique and Kenya** are struggling to adapt learnings on social distancing to low-income, high-density neighbourhoods.
- **Ethiopia** is looking for examples of what is working well in different countries in terms of economic-response policy measures.
- **Rwanda and Ghana** have experienced rapid increases in food prices and are looking to other countries to understand how to manage food supply in lockdowns and with closed borders.

03

Difficulty balancing WHO requirements with concerns about economic fallout, leading them to do nothing or too little



- Countries like **Belarus, Tanzania and Benin** are struggling to see how they can apply WHO guidelines on suppression and lockdown given the high risks, e.g. starvation. Some key countries lack necessary pressure and support to overcome concerns and biases. **Malawi** only stopped flights coming in on 31 March and is not quarantining possible cases.



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4. Technology & Data



Global coordination failures in technology and data

A number of international agreements have been put in place to accelerate cooperation in this area over the years, including the G8 Open Data charter, a G20 commitment last year to improve worldwide data governance, and a Global Digital Health Partnership. Barriers to global cooperation include:

- 1 Lack of **interoperability** (this is also an issue at NHS level in the UK).
- 2 Lack of **standardisation and accreditation**, meaning that the majority of effort in running analytic models is in pre-processing, merging, customising, and cleaning datasets, rather than doing the analysis. Some solutions, such as the Observational Health Data Sciences and Informatics (OHDSI) initiative, have been developed.
- 3 **Privacy and security** concerns on how data is used and protected remains.
- 4 **Data access and reliability**, not least in Africa, where digital and data infrastructure is limited.
- 5 **Lack of matchmaking** (backed by targeted funding) between technology companies providing Covid-19 related products and services and users in different parts of world.
- 6 **Geopolitical barriers** around data sharing concerns.



Coordination on technology needs to deepen in three broad areas



Open data: data that can be freely used, re-used and redistributed by anyone, for example:

- US Government's COVID-19 Open Research Dataset (CORD-19).
- EU's Open Data Portal – Coronavirus.
- Biomedical datasets such as the Covid Chest X-Ray Dataset.
- Singapore and South Korea's contact-tracing efforts.

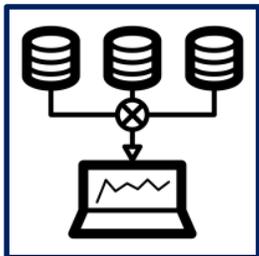
Access to such data is essential for forecasting, modelling, diagnostics, drug discovery and resources, but concerns around privacy have been raised. Accuracy and reliability is also essential but relies on testing.



Open source: software with source code that anyone can inspect, modify, and enhance, for example:

- The Singaporean government made its contact-tracing app, TraceTogether, available to others.
- The UK government has made its website notification function open for others to adopt and adapt.
- PPE designs have also been made open source to accelerate manufacturing, particularly in 3D printing.

There are some safety and standards issues, and governments need to jointly publish clear guidelines and specifications, but as the WHO's Dr. Michael Ryan has put it, "speed trumps perfection."



Platforms/aggregation: models to facilitate or intermediate suppliers and end users, for example:

- Real-time dashboards that aggregate data such as the Johns Hopkins Resource Center.
- The NHSX platform that will consolidate metrics such as occupancy levels at hospitals, waiting times and lengths of stay for patients. A similar effort exists in the US between Stanford Medicine, health-care procurement group Premier and supply-chain intelligence startup Resilinc.
- Expand collaboration with tech firms and telcos to access anonymised mobile-data information.

Data collection mechanisms are essential, as are interoperability and standardisation.



Global technological transfer needs to be accelerated

Where technology-based solutions exist, they should **be made available globally, fast enough**. There won't be one-size-fits all solutions as digital resources and capacities vary dramatically, but some broad areas to consider are:

- 1 CEPI, the Covid-19 Therapeutics Accelerator and the WHO Solidarity Trial have all received significant backing, but further efforts must go into **increasing access to biomedical data for research**. Initiatives such as Cord-19 should be expanded, so more countries contribute data for the common collective good.
- 2 Speed of funding needs to increase and a **Global Pandemic Fast Grant Tech Fund** should be explored so that funding for scientific research and technology adoption by local private sectors is fast and efficient.
- 3 Countries such as the Netherlands and Israel have already put in place compulsory licenses to overcome global patents, so an **international agreement on pooled rights and patenting and licensing strategies that facilitate rapid global access** to diagnostics, drugs and vaccines should be an area of focus.
- 4 Software-based tools, such as contact-tracing apps, should be made available on an **open source basis**, so that other countries can adopt and adapt depending on their needs. Efforts such as the Pan-European Preserving Proximity Tracings need to become global, with common protocols and interoperability key to this.
- 5 There should be a greater effort in **developing internet-era infrastructure** in the developing world, including a focus on connectivity. Creative solutions such as the Loon Project by Google and Telkom Kenya should be considered.



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5. Managing the Economy



The international economic fallout will be unprecedented



The economic hit will be worse than the global financial crisis

Unlike before, this recession is caused by intentional suppression of supply and demand.



Unemployment is rising rapidly around the world

Total global claims will significantly exceed previous crises, with rates not seen since World War II or the 1980s.



GDP falls will be exceptional

Double-digit contractions will depend on the length of suppression measures. Rather than a decline in investor behaviour, demand is stopped flat.



The impact on trade and supply chains threatens food security
The risk of major interruptions to supplies is growing, especially for low-income food-importing countries.

Impact of Covid-19



Composite PMI fell from 51.6 to 13.5 in April, the lowest since the survey began.



World GDP growth expected to contract by 3% in 2020.



30 million unemployment claims by the end of April



Unemployment hit a post-war high of 10.4%.



GDP is expected to fall by 15%, according to the CEBR.



Fitch ratings predict a fall of up to 30%.



WTO expects goods trade to fall 13% with global policy coordination and 32% without.



In China, food prices went up by almost 22% in February.

How it compares to 2008-10

- Composite PMI hit a low of 36 in the financial crisis.
- World GDP contracted 1.7% in 2009.
- This is many times higher than 2009.
- Unemployment peaked at 8.14% in 2008.
- GDP fell by 3.7% during the financial crisis.
- US GDP fell 6% 2008 to 2010.
- Farmers in Italy are struggling to find workers at the time of spring planting.
- Vietnam might restrict rice exports (3rd largest exporter).



Five major global coordination challenges are holding back the economic response to the pandemic

01

Fiscal space

The biggest constraint many countries face in managing the economic fallout of pandemics is sufficient fiscal space to put money where it needs to go and get tailored practical advice and implementation capacity. This is key for 1) economic mitigation measures (e.g. the local health response, adapting the economy to health response requirements, and cash and food transfers); 2) economic preservation measures (e.g. support to small and medium enterprises and strategic sectors); and 3) recovery measures and strategic investments (e.g. investing in medical equipment manufacturing). Many are dependent on a rapid global financing mechanism for this.

02

Trade and transport

Many countries have been cut off from global trade routes that they depend on for essential supplies or have seen transport costs rise substantially. There is a need to ensure the production and ongoing export of critical medical, food and other essential goods to deprived regions of the world continues, minimising critical shortfalls in vulnerable countries and regional blocs.

03

Food and agriculture

Many countries, particularly net food importers, risk large-scale food insecurity and hunger, in a way that may also mean social-distancing measures fail. There is a need for cross-border food channels from high-production countries to low-production countries, who should also join forces to ensure international food trade routes remain open. Export bans need to be lobbied down by the global community.

04

Industrial production

As the pandemic disrupts global trade routes, many countries lack the industrial capacity to produce essential goods – both medical and non-medical – needed to contain the pandemic and prevent shortages of critical goods (e.g. electricity equipment, electronics and medical equipment).

05

Rapid-response economic support programmes and technical assistance

Many countries rely on global programmes, mechanisms and technical assistance facilities to support key segments of the economy that have been acutely hit during such pandemics – such as SMEs, informal traders and bailout packages for major exporting and job-creating industries – but global response mechanisms have been slow to respond.



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6. Global Coordination in Recent Crises



Crises provoke various levels of cooperation. Recent crises relied on a lead institution and lead nation state

2014 Ebola

Outbreak came under control once global community coordinated support to affected countries.



- Declaration by the WHO hugely increased resources, including \$300 million from the World Bank, and staff for the African Center for Disease Control.
- Global NGOs such as Save the Children and Medecins Sans Frontieres played outsized roles due to in-country expertise, mobilising more support.



- A four-month delay in WHO reaction increased mortality, and delayed aid from those following international guidance..
- International action required leadership from a major and supporting power (US, UK and France).

2008 Financial Crisis

The UK and US coordinated a G20 meeting to broker a coordinated stimulus, and give increased authority to the IMF.



- Synchronised economic responses restored growth faster.
- The G20 brokered short-term fiscal targets.
- The IMF was made responsible for monitoring, with increased resource, and political oversight remained with the G20. Developing countries were given a bigger role in the IMF and World Bank.



- Coordination was unable to address medium- and long-term structural issues.
- International agreement required leadership from a major and supporting power (US and UK).

2001 Response to 9/11

US engagement gave legitimacy to the UN, allowing other organisations to follow.



- The UN became a key forum, coordinating proscription lists, with global agreement, increasing signatures.
- UN agreement gave legitimacy to broader cooperation, for example the Financial Action Task Force, led by the US.



- International agreement required leadership from a major and supporting power (US & UK).

Note: An earlier example was the establishment of the Global Fund to Fight Aids, Tuberculosis and Malaria in 2002. It was a global effort endorsed by the G8 off the back of strong leadership, first by the WHO's Director-General Gro Harlem Brundtland and then crucially by the UN Secretary-General Kofi Annan.



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7. A Global Coordination Architecture Reform Agenda



We need a global coordination architecture fit for the 21st century

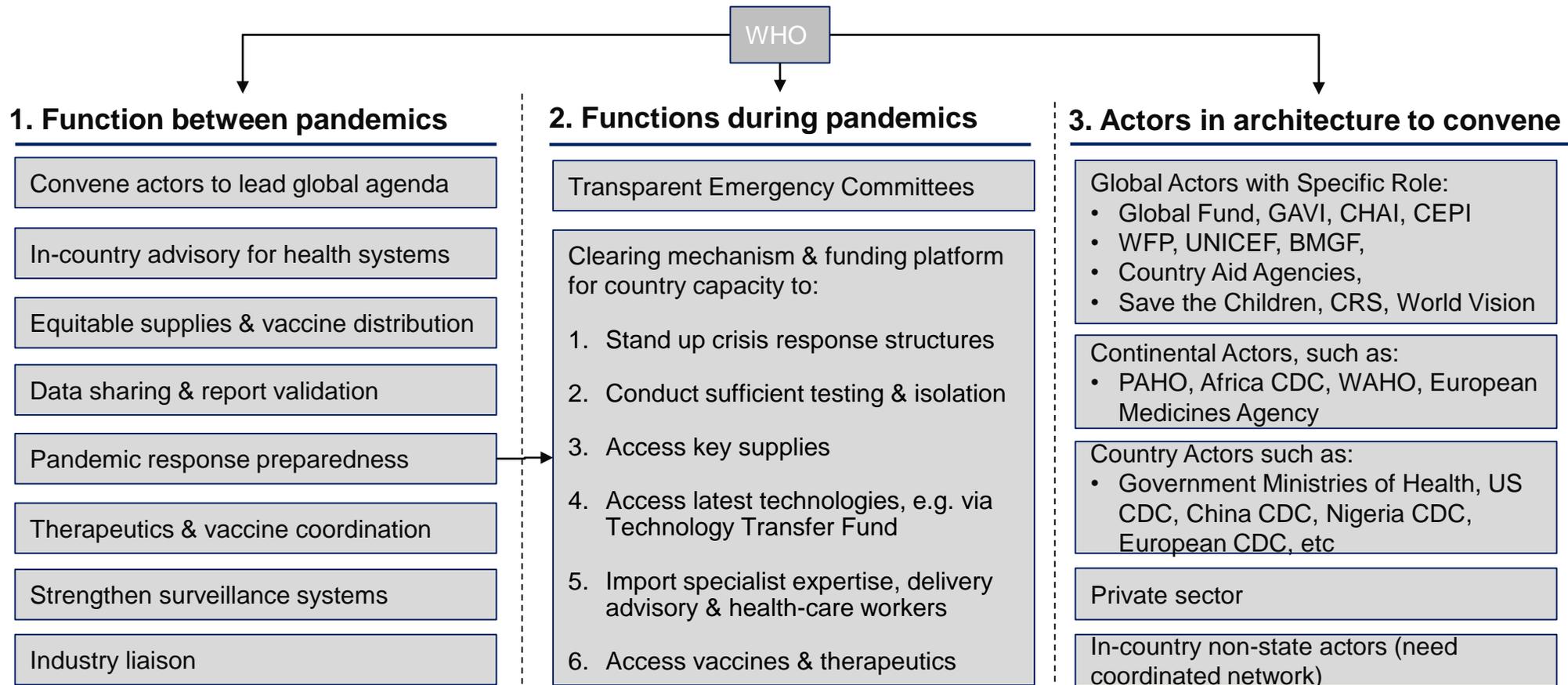
The end of World War II set the conditions for today's global architecture, including the IMF, World Bank, European Union and United Nations. As we come to terms with Covid-19 over the next few years, we will have the opportunity to adapt the global coordination architecture and make it fit for the challenges of today and of tomorrow. We must grab this opportunity, so that we can be better equipped to handle challenges such as pandemics, and also so we can deliver the Sustainable Development Goals. We propose **seven areas for global coordination reform**, and in the final two pages of this report, suggest a framework for reformed health-sector global coordination. In the coming weeks and months we will focus on other key elements of the global coordination architecture. The seven areas are:

- 01 Health system:** We need to recast the WHO. It was set up to handle pandemics on a much smaller scale than Covid-19. It needs to be recast such that it can effectively deal with pandemics like this one, while building long-term resilience of the global health system. At the moment the WHO requires full support in the urgent and necessary work it is doing to help countries in the poorest parts of the world fight Covid-19. The call for rebuilding the WHO in a new way in the face of the scale of this and other future crises is not a criticism of the organisation or its leadership, simply the realisation that, as presently constituted, it has neither the firepower nor the structure to handle an issue of this global magnitude.
- 02 Agriculture & food system:** We need an effective global body that can support, continent by continent, countries to transform their agriculture sector to be food secure, reduce large-scale poverty and become climate-smart.
- 03 Climate-smart economic transformation:** We need a mechanism to support each continent to deliver climate-smart, trade-friendly local productive capacity (including medical equipment) spanning poor and rich countries (including de-industrialised areas). This is key for challenges like job creation, migration, inequality, social protection, national security and illicit financial flows.
- 04 Education system:** We need a proper overarching mechanism to actively assemble evidence and, with vehicles like GPE and others, support countries to reform their education sectors to deliver quality, terrorism-safe education fit for the 21st century.
- 05 Data:** We need a mechanism for the coordination of data collection, sharing and use, oversight, privacy, open-source guidelines, patenting, internet access and cybersecurity so that the data exchanges needed to manage global challenges happen.
- 06 Fiscal & monetary system:** We need financing limits for IMF, WB and regional development banks (incl. via growth of SDR) and coordination/collateral tools (incl. emergency currency swap lines and debt management/relief frameworks) that are fit for purpose.
- 07 G20:** We need to make the G20 an effective mechanism for critical international action in key areas, not least in the six areas mentioned above.



Recasting the global health coordination architecture

As this paper has shown, there is a need to revisit the global health architecture and the 2005 International Health Regulations in order to defeat this pandemic and be prepared for future ones, while strengthening the global health system. The WHO needs to be recast and be empowered to play its role as needed. It needs sufficient clout, capacity, flexibility and burden-sharing. The key functions it needs to play and the various agencies that it needs to convene and coordinate to drive a global health agenda are:





Other non-health areas of coordination during pandemics

This pandemic has also shown the importance of coordinating certain non-health factors well in the midst of a pandemic, in effect to work as a support system for the global health response. This covers:



Fiscal & monetary

1. Make additional allocation to IMF special drawing rights of at least \$600 billion.
2. IMF to allow countries to exceed their lending quotas so country stimulus packages can be adequate.
3. Respond to UN call for \$2.5 trillion for developing country health and economic responses.
4. Central bank coordination, e.g. via emergency currency swaps.
5. Debt coordination, e.g. via debt swaps and Paris and London Club coordination.



Access to food

1. Ensure planting season in each vulnerable country is not missed.
2. Ensure three months strategic food reserves in food-insecure countries.
3. Address key value-chain bottlenecks in food-insecure countries.
4. Food relief to net importers of food.
5. Farming, input provider and local market adaptation to social-distancing measures.



Social protection when measures such as cash transfers and food aid are essential to be packaged with suppression measures to ensure they work (and to ensure criminal or terrorist groups do not exploit government vacuums), and when countries lack the capacity to roll these out rapidly enough.



Local production to rapidly retool local manufacturing to produce medical and other essential equipment in each regional bloc. Could be led by the development finance institution alliance.



Supply chain to support adaptation to social-distancing requirements by global transport sector (e.g. airlines, ships, ports, customs, borders) and to address upward pressures to freight costs, particularly for countries highly dependent on imports of essential goods.



Social mobilisation to adapt behaviours to the needs of pandemic response measures in a locally workable way. This requires international parameters (e.g. protocols or guidelines) for government engagement of key non-state actors, such as religious leaders and traditional rulers, during pandemics.