

International



The great PPE scramble

Why countries can't meet the demand for gear against covid-19

A host of efforts are under way to unblock bottlenecks

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“THE BUILDING next door,” says Flavio Volpe, “is a seniors’ home.” Over Easter, as he drove to and from his office, children were outside, holding up signs

sending love to grandparents within. The coronavirus had ruled out visits and hugs. On Easter Monday, April 13th, the director of the home, in the west end of Toronto, reported that 25 of its 247 residents had died of covid-19. “If you’re not asking what more you can do,” Mr Volpe says, “we’re all going to fall short.”

For Mr Volpe, that means responding to the surge in demand for essential medical supplies caused by the pandemic. He is president of APMA, the trade association for Canada’s auto-parts suppliers. So far 77 member firms are converting some capacity to making medical equipment. A consortium led by one of the biggest, Linamar, is helping to assemble ventilators. Woodbridge, an upholsterer, is turning out masks. Plastics firms are producing face shields; airbag-makers, gowns; others, nose-swabs.

Countries the world over are scrambling for kit. The hottest commodities are personal protective equipment (PPE) such as gowns and masks, ventilators for the critically ill and chemicals to make tests. Demand for PPE has risen not merely at the giddy pace of infections (of which nearly 2.4m had been confirmed worldwide by April 19th), but faster still, because of the risk of transferring the virus to colleagues and others. Britain’s guidelines, for example, say that doctors, nurses and care workers should replace gloves and aprons after every contact with a patient. Other kit, such as face masks, can be changed after each shift.

Matching such standards seems to be proving impossible as supplies run short. Estimates of the increase in demand run up to 20 times the normal level. In Britain, health officials said on April 17th that some PPE may now be reused rather than discarded. Some medical staff have used bin liners for improvised protection; care homes are complaining of chronic shortages. (On April 19th the government appointed Paul Deighton, chairman of The Economist Group, to oversee the national effort to produce and distribute PPE.) In Italy, doctors in some hospitals go into eight-hour shifts wearing adult nappies to avoid wasting the precious PPE they are wearing.

Typically in markets, surges in demand call forth extra supply. But the supply of medical gear has not been able to expand at the breakneck pace needed to keep up with the virus. Much is internationally traded. Economists at the Federal Reserve Bank of St Louis estimate that in 2018 America’s imports of equipment needed to treat covid-19 met 30% of its demand; China alone satisfied 9%. China made half the world’s masks before the pandemic began; not surprisingly, its exports of PPE fell by 15%, year-on-year, in January and February. Its production of masks has in fact increased 10-fold since the pandemic started, but most are

of masks has in fact increased 12-fold since the pandemic started, but most are going to domestic use—eg, for workers in factories returning to work.

Worse, the world economy's sudden halt has caused bottlenecks. Flexport, a freight forwarder, says that normally half of all air freight cargo (on some routes, up to 80%) travels in the holds of passenger planes that are no longer flying; shipping lines, meanwhile, have cancelled sailings or dropped ports from their itineraries. Vendors' commercial terms have become tighter too. Crooks are trying to get in on the act as hospitals have become desperate and prices have shot up. The FBI has warned buyers against dodgy brokers taking advance payment for non-existent equipment.

International goodwill has been in short supply too. Amid several reports of jiggery-pokery, French officials claimed that American buyers redirected masks from China destined for the Grand Est region, after stopping the shipment on the tarmac at Shanghai airport and offering three times the original price.

Several countries are using more conventional methods to keep hold of what they have. The European Union has restricted exports of essential goods to most non-members (some countries had even blocked exports to fellow members until the EU stepped in). On April 3rd President Donald Trump ordered restrictions on American exports of PPE, including respirators, masks and gloves. Such curbs run the risk of starting a retaliatory, beggar-thy-neighbour spiral. Chad Bown of the Peterson Institute for International Economics in Washington, DC, notes that American imports of the goods in Mr Trump's order outweigh exports by five to one.

Amid the scramble, lots of higher-minded efforts like Mr Volpe's are under way to fill the gap. Some are of cottage-industry dimensions: across Britain, for instance, "scrub hubs" have sprouted, with volunteers making basic gowns at home for doctors, nurses and care workers. But to make more sophisticated gear at scale, you need industrial muscle.

Fashion firms are turning their supply chains to masks and gowns. Sweden's H&M has sent 50,000 masks each to Italy and Spain, and is planning to deliver 1m protective, single-use aprons to Swedish hospitals in the coming weeks, all from suppliers in China. Canada Goose, which makes outdoor apparel, has committed itself to making 60,000 disposable gowns, designed for isolation patients, per week from its domestic factories. In France, the LVMH factory that normally makes Christian Dior perfumes has been retooled to produce hand-

sanitiser.

Makers of cars and planes are starting to turn out ventilators and other equipment—sometimes from scratch, sometimes lending their scale to the existing products of specialist companies. On April 14th General Motors began producing critical-care ventilators from Ventec Life Systems, a medical-technology firm, at its car factory in Indiana. Ford, PSA, Valeo and others have also switched from vehicles to ventilators. Israel Aerospace Industries, a defence company, has converted a missile production line to the same.

“With time, we can make anything,” says Mr Volpe at APMA. “Whether you’re making a plastic part that goes into a ventilator or a plastic part that goes into a Jaguar, it’s the same process.” The difference lies in speed. Changing an engineering process, from winning a contract to retooling to production, might normally take six months. That is being compressed into a few days. Canada’s health authorities have helped by speeding up approvals, he says, without dropping their standards. There have been some failures.

Medical equipment can indeed be hard to manufacture in hurry, particularly by firms that have never made it before. In Britain, NHS staff report that some new shipments of droplet-resistant gowns—of which there is a severe shortage, because they weren’t included in the existing pandemic stockpile, designed for airborne flu viruses—have failed quality tests when they arrived, rendering them unusable. After some Chinese-made equipment sent to Europe was rejected as substandard, China is now requiring that its exporters meet importing countries’ standards before their goods leave the factory (though that causes more holdups meanwhile).

Sourcing high-specification materials also can be difficult, although Barbour has had success switching from its famous wax jackets and Ford is adapting fabric meant for airbags. Mr Volpe says his biggest bottleneck is materials: some unwoven material for specialised masks is made in volume only in China; the supply of resins used in swabs are threatened by American export restraints.

These problems become even more acute with complicated medical machinery. Britain’s government has overseen a scheme under which aerospace, automobile and engineering companies agreed to make ventilators. However, only one design—adapted from an existing ventilator, from Penlon, a medical-device company—has so far been approved for medical use. Changes to the required specification led the government to cancel an order for thousands of units of a

more simple ventilating device, known as “BlueSky”, from a consortium including the Renault and Red Bull Formula 1 groups.

And clearing one bottleneck may reveal another. Although ventilators, for

example, are crucial for treating many covid-19 patients in intensive care, they are not used in isolation. Every ventilator bed requires high-pressure oxygen (which many hospitals cannot provide at scale) as well as other machines to monitor the heart and kidneys. All this takes up more precious space and requires trained staff, of whom many are sick or in precautionary isolation.

Even if sufficient stock is available, distributing it is a challenge. General practitioners, ambulances, mental-health services and care homes all need PPE as well as hospitals. In England, NHS Providers, which represents hospital trusts and other parts of the service, estimates that the supply chain has gone from delivering to around 250 trusts to tens of thousands of separate organisations. In America, according to a letter from a doctor published in the *New England Journal of Medicine*, federal agents attempted to confiscate PPE his hospital had ordered.

The problems facing rich countries, daunting as they are, are dwarfed by those awaiting many poor ones. Without domestic production capacity, many are entirely reliant on imported medical equipment, and hence acutely vulnerable to caps on others’ exports: Mr Bown calculates that 93% of Jamaica’s imports of air-purifying respirators come from America; 90% of Cape Verde’s face shields, protective spectacles and gloves come from the EU. Trade restrictions are also obstructing humanitarian aid, as agencies have to wrangle with governments to get equipment into countries where they are desperately needed.

There is some hope, though, that the companies newly supplying the home front will turn their attention abroad. Once Canada’s domestic needs are met, says Mr Volpe, his efforts will turn to “all those other countries”, in Africa and elsewhere, “that are going to be defenceless” against the virus. They may need all the help they can get.

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