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common standards on the ethics of artificial intelligence; a long-term vision for education; and biodiversity. The last of these is a belated, but much-needed recognition of UNESCO's long-standing experience in the study of Indigenous and local knowledge across research fields. Its importance is bolstered by the results of a UNESCO survey that asked 15,000 people what they saw as the biggest threats to peace – two-thirds of respondents said biodiversity and climate change were their greatest concern.

There's also a strong argument for reviving UNESCO's earlier science mission. In today's fractured world, fundamental and applied science could once again be used to help bring people and societies together. In the Middle East, for example, UNESCO could help to reconnect scientists in Qatar with those in neighbouring countries. At present, researchers are unable to collaborate because of a regional dispute. The agency could have a greater role in South Asia's science, which is affected by the strained relations between India and Pakistan. And UNESCO could do more for researchers in Europe, where fractures are developing between members of the European Union.

UNESCO should seek to reconnect people through science, as it has done before. But there can be no illusions about how hard the task will be. After 75 years, UNESCO is facing one of its toughest tests. Member states must make every effort to pull together with the agency's headquarters and its field staff. UNESCO's potential in a crisis-ridden world should not be underestimated. If UNESCO ceased to exist, the world would need to recreate it.

The challenges for COVID vaccination efforts

As positive results emerge at last, researchers must help the world to address vaccine hesitancy, supply logistics and price.

A year on from the first known case of COVID-19, the world has been hungry for good news. This month, vaccine makers have provided welcome nourishment.

Large clinical trials of four vaccine candidates are showing remarkable promise, with three exceeding 90% efficacy – an unexpectedly high rate – according to results released so far. None reported worrying safety signals and one has shown promise in older adults, a demographic that is particularly vulnerable to SARS-CoV-2 but sometimes responds less well to vaccines.

Early studies had shown that these candidate vaccines could stimulate an immune response. The latest trials show that this immune response can protect people against COVID-19 – a major achievement. Vaccine development is fraught with possibilities for failure, and even the most ardent optimist might not have expected to have a highly effective vaccine against a new virus less than a year after its genome was sequenced.

> **"An outbreak anywhere is an outbreak everywhere."**

But there is still much work for researchers and clinicians to do. First, they need to determine how well the vaccines work in people who are at high risk of COVID-19, including older individuals, people with obesity and those with diabetes. Second, it isn't clear how well some of the vaccines protect against severe COVID-19. Third, it is also not clear to what extent the vaccines prevent those who have been vaccinated from passing the virus on to others.

Some people are understandably concerned that the speed of both scientific review and vaccine regulation could compromise safety – despite assurances to the contrary from vaccine developers and regulators. To build confidence in vaccination, it's important that regulators, companies and their research partners keep promises they have made to ensure transparency, publish data and engage with open discussion of those data as they arrive.

Much of what we know about the latest trials has been communicated through press releases and media interviews, rather than papers that have been subject to independent peer review. Such speed of communication is necessary in an emergency. But more-complete data should not be held back, and the teams involved must be prepared to provide access to all relevant data as soon as this is practically possible, to allow others to scrutinize their findings and test their claims.

Vaccine distribution poses another challenge, and is accompanied by questions such as how much it will cost and who will pay for it. One of the vaccines that have shown success in late-stage trials was developed by researchers at the University of Oxford, UK, and the pharmaceutical firm AstraZeneca in Cambridge, UK. This vaccine can be stored in a normal refrigerator, which makes rapid distribution more feasible than it would be for the vaccine developed by Pfizer in New York City and BioNTech in Mainz, Germany – which needs to be stored at temperatures below −70 °C.

Importantly, AstraZeneca and Oxford have also pledged to provide their vaccine at cost price to all during the pandemic, and to maintain this price for middle- and low-income countries after the pandemic. But, as *Nature* went to press, neither Pfizer nor Moderna, a drug company in Cambridge, Massachusetts, with a similarly promising vaccine candidate, had committed to keeping prices down once the current pandemic is over. They need to change this stance.

A number of countries – most of them wealthy – have already pre-ordered nearly four billion doses. COVAX, a global alliance seeking to ensure that middle- and low-income countries get adequate vaccine provision, has been able to secure vaccines for only around 250 million people – nowhere near enough. Once prices start to rise, the poorest countries will be even less able to pay than they are now.

Not making the vaccine affordable for them would be morally wrong. It would also be short-sighted, because, as infectious-disease researchers often say, an outbreak anywhere is an outbreak everywhere.