Correspondence

COVID-19: use intersectional analyses

We call for an intersectional approach to COVID-19 research and vaccination programmes to better serve people. Socially, gender, race, ethnicity, disability, class and geography are key mediators of exposure to SARS-CoV-2, access to care and the impact of lockdowns. Biologically, age, male sex, obesity and co-morbidities are important risk factors for severe disease and mortality. More investigation is needed on how these factors interact to affect health and vaccination.

For example, mild to moderate adverse events following messenger RNA COVID-19 vaccines (such as fatigue and pain) are more likely to be reported by women than men (CDC COVID Response Team, Food and Drug Administration. *MMWR Morb. Mortal. Wkly Rep.* **70**, 125–129; 2021). Meanwhile, fewer women, younger adults and Black individuals intend to get a COVID-19 vaccine (K. H. Nguyen *et al. MMWR Morb. Mortal. Wkly Rep.* **70,** 217–222; 2021). Clearly, intersectionality is key in studying and communicating the risks and benefits of vaccination.

Despite interest in how the pandemic differentially affects people, biomedical and social scientists have siloed variables to focus on one group or risk factor. Instead, we need models that evaluate, for example, how the impact of age on COVID-19 outcomes differs by sex, race, gender, co-morbidities or frailty. Such approaches have borne fruit in flu vaccine development.

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Share pandemic sequences openly and fast

We agree that urgent research on SARS-CoV-2 sequence data is being slowed by antiquated regulations and those who put data ownership and priority over the common good (see *Nature* **590**, 195–196; 2021).

In 2006, to address this problem for influenza research, stakeholders created the non-profit Global Initiative on Sharing Avian Influenza Database (GISAID). Data were to be released to the public International Nucleotide Sequence Database Consortium (INSDC) database after no more than six months (see P. Bogner *et al. Nature* **442**, 981; 2006). Now expanded to include SARS-CoV-2, GISAID has maintained control of virus sequence data indefinitely, so researchers can't work on the data until they agree to restrictive legal terms (see go.nature.com/37atakb) that are inconsistent with scientific norms.

We propose that GISAID data be released within a few weeks. This would give submitters time to establish priority on findings through preprint servers, which publish within 72 hours — not an option in 2006.

In just over a year, GISAID has aggregated more than 500,000 SARS-CoV-2 genomes, enabling partner organizations such as Nextstrain to track in almost real time the virus's attempts to circumvent human defences. This is unprecedented. Now, let's make SARS-CoV-2 research even faster by working freely and openly to help address this enormous human tragedy.

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Sequence data: expand comprehensive access

Scientific data must not be 'balkanized' into multiple databases, each with its own rules and restrictions.

Almost 40 years ago, GenBank and the EMBL databank started independently. They soon joined forces and, with the DNA Database of Japan, formed a repository now called the International Nucleotide Sequence Data Collaboration (INSDC). China is now set to join. The INSDC has been one of the world's most successful initiatives to collect and share scientific data (see *Nature* **590**, 183–184; 2021). As DNA sequence data accumulate at ever-greater rates, the need for INSDC to continue and expand has never been more urgent.

The COVID-19 pandemic is an excellent example of data sharing leading to effective science (see *Nature* **590**, 195–196; 2021). The first sequence of the SARS-CoV-2 virus was released by Yong-Zhen Zhang on 11 January 2020 and was released completely openly that same day in the INSDC databases (accession #MN908947). This enabled the development of rapid PCR-based tests for the viral RNA and jump-started vaccine development.

As international advisers to the INSDC, we call on the scientific community to help ensure that this openness and sharing grows to include many more types of data, so that scientists can use the INSDC to catalyse ever more biological discoveries.

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Russia: scientists petition to end political persecution

We are among more than 900 academics who signed an open letter (see go.nature.com/2ovm) in February calling for an end to escalating violence against the political opposition in Russia, and for authorities to restore open dialogue with the public. Two Nobel laureates and members of national academies around the world have signed.

The letter voices grave concerns: police brutality; court rulings targeting political opposition; and the apparent use of chemical weapons, which violates international law. It calls for cessation of the persecution of opposition leader Alexei Navalny and his supporters, and for an investigation into his alleged poisoning. It demands international cooperation to jointly confront global threats, and an end to the use of force against peaceful demonstrators.

Russian nuclear physicist Andrei Sakharov began his Nobel lecture after winning the 1975 Nobel Peace Prize by declaring: "Peace, progress, human rights — these three goals are insolubly linked." One signatory to the letter, Natalia Berloff, a mathematics professor at the University of Cambridge, UK, has said that, when faced with injustice, "being silent means being an accomplice".

We call on members of the global scientific community to support colleagues in Russia.

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