

international concern. This allowed it to impose a requirement that all travellers entering or leaving Pakistan, Cameroon, Syria and Equatorial Guinea — the countries currently exporting polio — must have up-to-date polio vaccinations. And it strongly recommended the same for other nations with ongoing polio outbreaks. The WHO also requires the governments of affected countries to declare that polio constitutes a national public-health emergency.

It is too soon to tell how well countries will enforce the travel restrictions or how effective they will be (see page 285). But the WHO's declaration has another, and arguably more important, potential impact. It has greatly heightened public and political awareness of the global polio threat. The move could yet shame those nations with weak control efforts into doing better. Ultimately, political will, through every level of government right down to the local level, is crucial if eradication efforts are to succeed.

The setbacks have reignited scepticism among some critics of the multibillion-dollar global effort, which has repeatedly missed its own deadlines for worldwide eradication — the first such deadline was set for 2000. But this must not obscure the fact that impressive gains have been made, so much so that at the end of 2012, global polio eradication truly seemed within reach. It is important to turn the current situation around quickly, consolidate those gains, and condemn polio to the history books.

There is cause for optimism. In Afghanistan, the virus has been wiped out from many areas where it was previously rampant, with cases now restricted mostly to the northeast, where polio is imported from across the border with Pakistan. Afghanistan is expected to become polio-free perhaps as soon as year's end. Nigeria has also improved its eradication efforts, resulting in a sharp drop in case numbers. Eradication there is in sight, although a current worsening of the country's political and security tensions risks undoing the progress. Pakistan, despite a lacklustre control effort, has also shrunk the geographical range of the virus.

The global-eradication effort — despite some shortcomings — has a good track record of successfully fighting sporadic flare-ups. There is every reason to believe that the current spate of outbreaks will be contained (although war-torn Syria could remain problematic).

The big challenge is to conquer the virus in the endemic countries that are fuelling exports of the disease — and above all in Pakistan. A report released in May by the Independent Monitoring Board of the Global Polio Eradication Initiative puts it bluntly: "Pakistan's situation is dire. Its program is years behind the other endemic countries." Unless matters change, the report concludes, the country is "firmly on track to be the last polio-endemic country in the world".

That damning indictment needs to be heard and responded to at every level of Pakistani society. The country faces many obstacles — but so too did the other countries that nonetheless have succeeded in eradicating polio. There is no excuse for Pakistan not to do so. Its government must pull out all the stops to act swiftly and decisively. As the report rightfully argues, ultimate responsibility for Pakistan's bungled polio efforts lies with its authorities: "If the country's leaders were to truly and wholly take on the mission of wiping polio from their borders, what now seems to some an impossible dream would fast become reality."

Another barrier to eradication is societal resistance to vaccination, rooted, for example, in local distrust of immunization campaigns and unfounded concerns that it conflicts with religious beliefs. Polio has spread to Waziristan in northern Pakistan, a stronghold of the Taliban, who have banned vaccinations. Vaccinators have also been murdered.

In the past few months, international Islamic scholars and bodies — including the newly formed Islamic Advisory Group on Polio Eradication — have to their credit spoken out to condemn attacks on polio workers, and to emphasize that polio vaccination is compatible with Islam, denouncing those who claim otherwise. Resistance and suspicion of vaccines will always be present, but religious leaders can help by reiterating these messages to local populations.

Pakistan's situation is exacerbated by the Taliban's stubborn blocking of polio vaccinations, ostensibly in opposition to US drone strikes. But polio has no religion. It respects no political affiliation. For the benefit of all, every effort must be made to overcome residual resistance to vaccination and to root out the virus from its last strongholds. ■

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Food for thought

Researchers investigating different farming practices should not have to pick sides.

Some debates run and run. Last month, an analysis found that a selection of organically farmed food contained, on average, higher concentrations of supposedly beneficial antioxidant compounds than food produced by conventional farming (M. Barański *et al.* *Br. J. Nutr.* <http://doi.org/tqs; 2014>).

This field is still relatively small and the quality of research can be variable. The analysis advances previous work, thoroughly evaluates the current situation and yields some results that warrant further investigation. Still, several prominent nutrition scientists have voiced valid criticisms of the paper's method and statistical analysis (see go.nature.com/ikx15z), and have raised concerns over the scientific rigour of some of the primary research that it covers.

It is good to be thorough: the study examines all of the available evidence so far. But in a field in which research quality can be hit and miss, it can be better to be cautious. The authors would perhaps have generated more confidence in their results if they had been more selective. But such selection, inevitably, raises questions about how it is done.

Beyond the arguments about this specific study, which the authors have defended, lies a bigger issue. There are some fundamental

questions that this type of research cannot answer, despite the way the results have been interpreted by the mainstream media as pointing to clear benefits of organic farming.

The study attempts to examine how different farming methods affect the nutritional quality of the product — an important question. There is plenty of room for improvement in the conventional farming system and in the nutritional quality of many people's diets. So far, so good.

The paper also refers to the link between increased dietary concentrations of antioxidant compounds, such as phenolic acids and flavonols, and a reduced risk of chronic diseases — including some cancers. However, the evidence for such a link is mixed, and tentative at best. A more important question is not the level of antioxidants in organic or non-organic food, but how that contributes to health.

It is also not clear that organic farming practices are the cause of the observed higher concentrations of antioxidants. Research could help to determine, for example, whether organic crops — which are not treated with pesticides — release more phenolic compounds as a defence against pests and pathogens. Or perhaps the nitrogen fertilizers applied to conventional crops encourage growth rather than the production of such chemical defences.

This is a useful discussion, but difficult to have on neutral territory. Research on the different farming systems can often seem like a contest in which one practice is pitted against another and in which researchers must pick sides. Science should stay focused on the heart of the matter: the provision of more nutritious food for more people in a more sustainable way. ■

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