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those who live in single households and might benefit from company and provision of food should be prioritised.

Appropriate communication and awareness need to be enhanced for better community acceptance of facility-based isolation. If populations are made aware of the public health benefit of institutional isolation, appreciate the fact that such isolation will lead to better protection of their loved ones, and is associated with better clinical care for themselves, including easy access to food and practical support, maybe public acceptance will increase.

We declare no competing interests.

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## Unnecessary obstacles to COVID-19 mass testing

Whether an effective COVID-19 vaccine will be universally available in the UK within a year is unclear. The UK Government has now accepted that in the interim, the only way to restore the normal life that COVID-19 has overturned for so many people is whole-population testing about once per week with integrated contact tracing.<sup>1</sup> However, while profitable for consultants and contractors, Operation Moonshot mass testing plans<sup>2</sup> might fail as badly as their current testing and tracing systems.

Public health specialists working at the local level have more experience than Deloitte, Serco, or G4S in population screening and contact tracing, and the best (and cheapest) tests for rapid roll-out might well be non-proprietary PCR and loop-mediated isothermal amplification (LAMP) protocols. No approved commercial tests were available when the pandemic emerged, so the government has decided “to provide first-generation in-house assays for public health laboratories as an interim measure and for gradual migration to a commercial alternative.”<sup>3</sup>

We urge the government to reconsider this commitment to unspecified commercial contracts that cannot supply the 10 million tests per day needed for weekly testing in the UK. Rapid tests administered by a trained person, although essential in airports and various other public venues, are not suitable for weekly whole-population screening. Self-collected samples analysed in a laboratory can provide reliable same-day results entered online, triggering household isolation and immediate contact tracing.<sup>1</sup> Whether sample testing takes 5 min or 3 h is less important than the proportion of results that are reported both personally and centrally within a day or less. Both RT-PCR and RT-LAMP can be almost as sensitive as quantitative PCR, the gold standard test, and false positives can be virtually eliminated by a confirmatory

test. Cost-benefit evaluation of RT-PCR and RT-LAMP tests on self-taken saliva samples compared with rapid point-of-care nasal swab tests and other systems can be carried out during roll-out of organised population screening, which should expand as rapidly as the supply of kits, equipment, and reagents permits. As population screening expands, this ongoing comparison of RT-PCR and RT-LAMP against commercial alternatives will identify the best tests for screening and for other purposes.

Large university and independent labs will contribute to the roll-out and evaluation of population screening in their city or district, supplementing the capacity of the lighthouse labs while local RT-LAMP testing facilities are being established. They can provide expertise, a trained workforce (including volunteers), and, in many cases, the extra PCR machines.

We declare no competing interests.

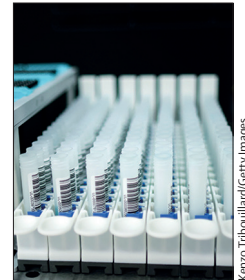
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## Influenza control during the COVID-19 pandemic

As the northern hemisphere influenza season begins, challenges loom for health systems bracing to manage a simultaneous rise in cases of COVID-19 and influenza. Successive winters have taught us that the burden of influenza is high in ordinary times, and a



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COVID-19 pandemic caused by a virus with shared symptomatology, but with protracted hospital admissions and a higher risk of mortality, could potentially make the forthcoming northern hemisphere influenza season a public health catastrophe.

COVID-19 spread through the southern hemisphere just as the influenza season began, yet the experience this autumn and winter has been remarkable for the near absence of influenza. Following on from weekly surveillance data from Australia<sup>1</sup> and New Zealand, which showed historically low levels of influenza infections during the 2020 influenza season, we reviewed data from the WHO Global Influenza Surveillance and Response System shared on FluNet. Across countries in the temperate southern hemisphere, the number of specimens positive by subtype from WHO sentinel surveillance sites corroborates little southern hemisphere influenza activity since mid April, 2020 (appendix). Although testing might have been focused away from influenza and onto severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in some settings, this was not the case in Australia, for example, where more influenza tests were done in 2020 than in previous years, with few positive results.<sup>1</sup>

Observational data cannot determine causation, but these early findings are consistent with the hypothesis that the non-pharmaceutical interventions (NPIs) put in place to control the spread of COVID-19 could have dramatically reduced the burden of influenza and prevented winter epidemics. If this were the case, it would not be consistent with prevailing dogma that specific NPIs prominent in the management of COVID-19 (eg, widespread mask use, school and workplace closures, physical distancing, travel restrictions, and limits on gathering sizes) would have limited efficacy for influenza control, due to the characteristics and transmission dynamics of influenza virus and experience in previous influenza pandemics.<sup>2,3</sup>

As restrictions are reinstated in Europe to control increasing COVID-19 case numbers, the southern hemisphere experience suggests consideration must be given to whether these NPIs could affect other transmissible infections—particularly influenza, with its high morbidity, mortality, and health-care costs—and how this off-target effect on viruses other than SARS-CoV-2 could protect health system capacity. As evidence on both the benefits and costs of NPIs in the COVID-19 pandemic accrues, their role in the management of future influenza pandemics can be carefully considered.

We declare no competing interests.

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## Herd immunity confusion

Hopefully, at some point, we will have a vaccine against severe acute respiratory syndrome coronavirus 2, and we will use this to seek ways of generating herd immunity, ie, promoting widespread immunity in the population and reducing transmission so that the epidemic will end without having to vaccinate everybody.<sup>1,2</sup>

Herd immunity is a real phenomenon that occurs whether the immunity generated is naturally acquired or vaccine-induced. This term has been used for many decades applied

to diseases of people, livestock, and wildlife.<sup>2</sup>

In a paper describing the history of the term, David Jones and Stefan Helmreich<sup>3</sup> selectively quote an interview I gave on BBC Newsnight at the start of the epidemic in the UK on March 12, 2020, in which I attempted to explain this phenomenon.<sup>4</sup>

At the time, it was clear that the UK would be experiencing an epidemic, but how that would develop in the coming weeks, months, and years was unknown. In the same interview, I also said that “the better we manage it, the longer it will be. The worst case would be to have an uncontrolled epidemic”.<sup>4</sup>

The epidemic is ongoing, and it remains the case that although most people remain susceptible to infection, control of transmission has to be through non-pharmaceutical interventions. Isolation and quarantine, physical distancing, and contact tracing will be required until transmission is reduced by immunity. Ideally, this immunity will be vaccine-induced rather than through transmission of the disease.

There have been increasing suggestions that one option is to simply protect everyone who is at risk of infection and allow the epidemic to spread in those at low risk. In this same interview from March, 2020,<sup>4</sup> I noted that this approach is conceptually appealing but impossible in practice. It is not a strategy I endorse. I was not aware, until I read Jones and Helmreich's Perspective,<sup>3</sup> of the historic association of the term herd immunity with racial and eugenic interpretation. I strongly dissociate myself from any link with this meaning and clarify that I was referring to herd immunity purely in the scientific sense.

Since the interview, the term has also become layered with further political interpretations, and even used to label strategies, but they are not clearly defined.

The scientific and medical communities have a duty to inform and support the public, especially during times that threaten lives with an

For New Zealand surveillance data see <https://www.esr.cri.nz/our-services/consultancy/flu-surveillance-and-research/>

For FluNet see [https://www.who.int/influenza/gisrs\\_laboratory/flu-net](https://www.who.int/influenza/gisrs_laboratory/flu-net)

See Online for appendix



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