

Universal weekly testing as the UK COVID-19 lockdown exit strategy

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The British public have been offered alternating periods of lockdown and relaxation of restrictions as part of the coronavirus disease 2019 (COVID-19) lockdown exit strategy. Extended periods of lockdown will increase economic and social damage, and each relaxation will almost certainly trigger a further epidemic wave of deaths. These cycles will kill tens of thousands, perhaps hundreds of thousands, of people before a vaccine becomes available, with the most disadvantaged groups experiencing the greatest suffering. There is an alternative strategy: universal repeated testing. We recommend evaluation of weekly severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) antigen testing of the whole population in an entire city as a demonstration site (preferably several towns and cities, if possible), with strict household quarantine after a positive test. Quarantine would end when all residents of the household test negative at the same time; everyone else in the city can resume normal life, if they choose to. This testing programme should be assessed for feasibility in one or more cities with 200 000–300 000 people. Such a feasibility study should begin as soon as possible and continue after the current lockdown ends, when the infection rate will be fairly low but rising. The rate at which the number of infections then rises or falls, compared with the rest of the UK, will be apparent within a few weeks. A decision to proceed with national roll-out can then be made, beginning in high-risk areas and limited only by reagent supplies. If the epidemic is controlled, hundreds of thousands of lives could be saved, intensive care units will no longer be overloaded, and the adverse effects of lockdown on mental ill health and unemployment will end.

A local population of 200 000 people, with 90% compliance, will require 26 000 tests per day, plus a small excess to offer daily antigen testing for National Health Service (NHS) staff and care workers. Such a study is likely to have the enthusiastic support of the population. Whatever the results, these data will enable policy to be based on real-time evidence, rather than modelling assumptions, of new infection rates in the expanding, regularly tested population and the untested remainder. The untested population can be monitored by testing population samples and by NHS number linkage to hospital diagnoses and general practitioner records. Complementary strategies, including contact tracing and telephone applications, will be crucial in the untested population and might enable testing to be done less frequently, as prevalence falls. Testing would be voluntary, but penalties for breaching quarantine after a positive test in a household could be considered. Helplines would be provided to support quarantined households with access to income compensation, mental health support, and food delivery.

National roll-out of this SARS-CoV-2 testing strategy would entail mobilisation of community assets. Public advisory groups and citizens supporting these efforts would be indispensable. A voluntary Dunkirk spirit would be the only way for 10 million tests to be done daily by collaborating university and commercial laboratories with the necessary quality-checked equipment (PCR machines). PCR reagents should be obtained from manufacturers, rather than clinical test companies, and exempt from regulatory requirements on medical testing to limit costs and ensure supplies. This might require emergency legislation.