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Stopping the lockdown and ending the Covid-19 epidemic by universal weekly testing as the exit strategy

The British public are offered alternating periods of lockdown and relaxation of restrictions, with increasing economic and social damage. Each relaxation will almost certainly trigger a further epidemic wave of deaths. These cycles will kill tens and perhaps hundreds of thousands of people before a vaccine becomes available, and the most disadvantaged are already suffering the most.

There is an alternative: universal repeated testing. We recommend evaluation of weekly Covid-19 antigen testing of the whole population in an entire city as a demonstration site (preferably several towns and cities), with strict household quarantine following a positive test. Quarantine ends when all residents test negative at the same time. Everyone else can resume normal life if they choose to. This should be assessed for feasibility in one or more cities with populations of 200,000-300,000. 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 it then rises or falls compared with the rest of the UK will be apparent within a few weeks. A decision can then be taken on national roll-out, beginning in high-risk areas and limited only by reagent supplies. If this works hundreds of thousands of people living in the UK may be saved, not to mention intensive care overload and the miseries of unemployment, mental ill health and other adverse outcomes of lockdown.

A local population of 200,000 with 90% compliance will require 26,000 tests per day, plus a small excess to offer daily antigen testing for 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 (instead of modelling assumptions) on new infection rates in the expanding regularly tested population and the untested remainder. The latter can be monitored by testing population samples as well as by NHS number linkage to hospital diagnoses and GP records. Complementary strategies including contact tracing and phone apps will be critical in the unscreened population, and may enable testing to be done less frequently as prevalence falls. Testing would be voluntary, but penalties for breaching quarantine following 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 will entail mobilisation of community assets. Public advisory groups and citizens supporting these efforts will be indispensable. A voluntary "Dunkirk spirit" is the only way for 10 million tests to be done daily by collaborating university and commercial labs with the necessary quality-checked equipment (a PCR machine). PCR reagents should be obtained from chemical manufacturers rather than clinical test companies and exempt from regulatory requirements on medical testing to limit costs and ensure supplies. This may require emergency legislation.

This letter is available in a longer version with a full list of signatories here:

<https://t.co/CH0WHdqgi6>