

COVID-19 Lockdown – Time to find an exit strategy and reflect on the costs and benefits!

John Watkins*

Department of Epidemiology, Cardiff University, United Kingdom

Introduction

On the 23rd March 2020 the UK Government announced a total lockdown limiting the civil liberties and free movement of its people for a period of 3 weeks. On the 16th April it was decided to extend this lockdown for a further 3 weeks [1].

The aim of this ‘lockdown’ policy is succinctly summarised with the slogan ‘Stay Home, Stay Safe, Save Lives, Protect the NHS’. This policy, the government claims, has been led by the science and is based largely on the mathematical modelling developed at Imperial College London [2]. This modelling predicted that, without mitigation measures being imposed, the NHS would be completely overwhelmed and many thousands of lives lost. These mitigation measures have been well documented and involve, among other things; closure of universities and closure of schools. Beyond these modelled scenarios, on March 23rd the total ‘lockdown’ was imposed with complete closure of shops, bars, restaurants, sport and all forms of social gathering, with people being told to stay home and all non-essential journeys banned, a restriction enforced by law [3]. The introduction of these draconian measures are intended to reduce transmission of the virus, lower the magnitude of the epidemic peak and extend the epidemic curve into the summer months, hence reducing daily demand for NHS resources to a more manageable level. Surprisingly, the science underpinning this decision making has received very little critical analysis by the scientific and economic communities. The Imperial Model, first developed to understand the evolution of an Influenza Pandemic in the early 2000s, had not been published, or opened to scrutiny, before it led politicians to shutdown normal daily living in the UK, France, USA and many other countries.

The societal and economic impact, not only on our personal lives but also on the health of the global economy, has been profound with businesses, both large and small, going into receivership and bankruptcy with workers furloughed in order to protect jobs. This period of economic stasis has been heavily financially supported by the UK government with the historically largest economic package put in place to reduce hardship [4]. Despite this, the very agencies there to help individuals and employers; the banks, benefits agencies and local government, have been completely overwhelmed resulting in a sector of the population left financially stranded, resorting to ‘soup kitchens’, food handouts and homelessness [5].

Economic impact

The Office of Budget Responsibility, created in 2010 to promote openness of public finances to scrutiny, estimates that the economic impact of the current lockdown to the UK’s economy will see an increase in public sector borrowing, this year, of £ 218 billion and a net

debt, by the middle of this decade, of around £ 260 billion, 10% of GDP, if it remains in place for 3 months [6]. These findings are echoed by the Centre for Economics and Business Research who have estimated the lockdown costs to the UK economy of some £ 2.4 billion per day, an average household income losing £ 515 per month, with public debt rising to wartime levels [7].

Meanwhile, researches at the London School of Economics and Political Science, LSE&PS, have used the Imperial Model and the impact of suppression initiatives, to calculate the net lives saved by the current lockdown in the UK [8]. The LSE&PS group, made the assumption that the lockdown would not only save lives from COVID-19 infections but also from deaths averted due to such things as reduction in road traffic accidents. On the other side of the mortality equation they have factored in the possibility that the lockdown itself is detrimental to human welfare and wellbeing, resulting in deaths from not seeking, or being provided with, vital health services, changes in therapy, or the consequences of enforced confinement such as, increased alcohol and substance misuse, deterioration in mental health and wellbeing leading to depression, suicides, domestic violence etc., the ramifications of which can last long after isolation ends. They also made the assumption that there would be a 50% overlap with expected all-cause mortality. Using this methodology they estimate around 159,000 deaths would be prevented with a fiscal gain to the UK’s GDP of 3%, or £60 billion, with, on average, each life saved surviving for a further 5 years.

Cost effectiveness

The UK has led the world in evaluating the cost effectiveness of healthcare interventions with an appraisal machinery led by NICE. The NICE methodology is based on making comparisons between the outcomes, measured in Quality-Adjusted Life Years, QALYS, for new and comparator interventions [9]. NICE then calculates an ICER (Incremental Cost Effectiveness Ratio) which is the differential cost for the new compared to the old therapy for each QALY gained. It must be noted that NICE uses the lens of direct healthcare costs, from the perspective of the payer and not the whole cost to society, nevertheless, for many conditions the full societal burden may well lead to a lower ICER than their threshold of willingness to pay, of around £ 20,000 to £ 30,000, when those who benefit from treatment can return to full economic activity. Even in very special circumstances, such as with rare conditions, or end of life, NICE are unwilling to sanction interventions above £ 50,000 [9].

*Correspondence to: John Watkins, Department of Epidemiology, Cardiff University, United Kingdom, E-mail: John.Watkins@wales.nhs.uk

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Using the ICER methodology of NICE, with the net cost of the lockdown of £ 200 billion, less the fiscal benefits of saved lives, each of the prevented deaths will have cost the UK around £ 251,000. While direct comparisons between the NICE threshold of willingness to pay and the cost benefit analysis calculated here for the lockdown, are not wholly justified, it does throw into stark relief difference in the debt burden we currently are accumulating and our attitudes to the value of life in more normal, circumspect times. This sum of £ 251,000 per life year, may in QALY terms be far more costly since we know that COVID-19 has a profound effect on people's health in the short to medium term and some elderly may never recover to return to their former independent lives.

In order to reduce the impact of the evolving economic downturn and to justify the costs of lockdown, it is clear nations need to develop exit strategies and, acting, responsibly should have in place contingency plans to deal with the situation where cases and deaths start to rise again. To date, the Government has managed to take the UK population with it on this journey into lockdown but now we urgently need a policy which can be communicated widely, so we can avoid a series of lockdown/release cycles and the attendant loss of morale and increased economic uncertainty which can lead to civil unrest, as seen in the USA and elsewhere [10].

Finding solutions

The question therefore arises how does the UK move forward out of lockdown and can lessons be learnt from elsewhere?

As we pass the peak of the COVID-19 pandemic and daily case numbers start to fall, a different approach, going forward, needs to be adopted, learning lessons from alternative strategies elsewhere. South Korea and Sweden, for example, stand out in international comparisons since neither have adopted a lockdown and have mostly kept their societies open. South Korea, from the start of the COVID-19 pandemic, based its policy on extensive testing, effective case tracking, quarantine of cases and concentrating treatment on the most severe cases [11]. Sweden, [12] on the other hand is an outlier, in that, it has never adopted draconian, top down, measures but rather relying on self-regulation and social distancing, bars and restaurants remaining, mainly, open.

Way forward

Moving forward, the imminent availability of serology testing gives us the opportunity to access the extent of population and institutional spread, this knowledge being vital to the decision making as to the order sectors and settings are opened. Some emerging findings are indicating that pre-symptomatic spread within settings, for example, He, *et al.* estimate that 44% of secondary cases were infected when there had been substantial household clustering [13], while Wölfel, *et al.* [14] have demonstrated the high viral loads present in this peri symptomatic period. These findings may be reinforced by a recent case report looking at the transmission of COVID-19 within and beyond a closed setting [15].

If we accept that 80% of cases are mild, or asymptomatic and that most deaths occur in the vulnerable groups we already identify and vaccinate against Influenza, then we should be able to develop a policy, coming out of lockdown, that recognises this segregation of risk and not impose economically damaging, unsustainable confinement on the population as a whole. We should also recognise that individuals have separate physical, social and psychological needs, while the physically

vulnerable need to be isolated, other groups with mental health problems, or chaotic social lives, need to socialise, as we move forward, therefore, a balance needs to be struck.

In reality, the lockdown is not a total blanket ban on social and setting based interaction. Up to 40% of the working age population in the UK are defined as essential workers, this group, ranging from doctors and nurses on the frontline, to those running recycling and collection services. Schools remain open for the children of essential workers, some parts of the construction and motor industry are functioning and parliament returned this week to live session. We therefore need to reflect on this and see that it is not such a leap of faith or increased risk, if we start reopening society, along the lines of Sweden and South Korea. However any easing of the current situation needs to be in lockstep and coupled with, isolation of the most vulnerable, extensive testing and contact tracing, allowing all but the most vulnerable to return to work and civil society to move towards normality.

The move towards what we would recognise as normal life, all be it with some aspect of social distancing and limitation of high clustering in public places, all depends on adequate and timely antigen testing for COVID-19 being available, an ability to process and turn round results quickly and a system of contact tracing and isolation that is able to cope, along the lines of South Korea. We therefore need to take the opportunity of the remaining weeks in this current period of lockdown to work out the logistics of mass antigen testing, a serological testing programme and a timetable for opening the economy and society.

Political decisions were made that were ahead of the science and that lockdown was the only way forward in tackling this pandemic, South Korea, Sweden and other places have demonstrated that this may not necessarily be the case and the cost effectiveness argument does not support its continuation. The current strategy of societal lockdown cannot continue indefinitely and the longer it continues the more physical, psychological and sociological damage we do to individuals who will never suffer adverse effects from COVID-19 infection and the greater will be the economic burden placed on this and future generations.

Key messages

- Total national lockdown reduces deaths from COVID-19 but its broader impact on health, well-being and mortality needs to be taken into account
- The daily cost of governmental enforced lockdown is not supported by normal cost-effectiveness arguments and will have an immeasurable impact on the global economy
- Restriction of civil liberties in western democracies can only be held in place for a limited time period before social unrest and dissent emerges
- Governments need to urgently formulate realistic exit strategies from lockdown and, during their formulation, consult widely.

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