

Professional witness statement
Professor Anthony Costello

Session 3 24 March 2021

DID THE GOVERNMENT ADOPT THE RIGHT PUBLIC HEALTH STRATEGY?

STATEMENT

I (name) Professor Anthony Costello

Job title/ role/ occupation Professor of Global Health and Sustainable Development

will say as follows: _____

1. I make this statement for the purposes of the People's Covid Inquiry, which is to be held on 24 March.
2. I am able/~~unable~~ to attend and give evidence. If unable to attend, I agree to my statement being considered by the Inquiry.
3. What is your job/ role/ occupation – how long doing this for/ brief summary of background/ experience - if possible, attach CV to statement

- Consultant Paediatrician since 1990
- Professor of International Child Health and Director of Institute of Global Health, UCL 2000-2015 During this time I led teams conducting public health and community engagement population trials to reduce death and disease in women and children in south Asia and Africa.
- Director, Department of Maternal, Child and Adolescent Health, World Health Organization Geneva, 2015-2018
- Professor of Global Health and Sustainable Development, UCL since 2018

See attached cv.

4. What is your connection/ interest/ background/ experience relevant to the pandemic in England?

As a paediatrician who has worked in the UK, African and south Asian countries I have a strong interest in infection management and control. I have conducted extensive research using large population trials into ways in which communities can be mobilised and the impact of participatory approaches on death and disease outcomes.

As Director, Department of Maternal, Child and Adolescent Health, World Health Organization Geneva, 2015-2018, I played a leading role in the response to the zikavirus

pandemic. I was interested to see how WHO and member states would respond to this pandemic and I retain strong links with leading professionals in WHO.

5. How are you able to assist the Inquiry – what is your expertise/ knowledge/ specialism?

I followed the early stages of the pandemic very closely and was in contact with senior officials and the DG at the World Health Organisation.

When the membership and minutes of SAGE meetings were kept secret in February to April, and we had no way to monitor the UK response, I helped set up Independent SAGE. I recommended 15 experts from public health and other disciplines to Sir David King and we set up the group that has closely monitored the pandemic management, preparing many reports and engaging with the public through weekly online meetings, and extensive contacts with the media. It was the pressure from Independent SAGE that led Sir Patrick Vallance to release the details of SAGE members and later their meeting minutes.

My expertise is in women and children's health, infection control, community mobilisation, cluster randomised trials, WHO policy, and policy implementation at scale.

6. What in your view were the original vision and principles underpinning the NHS?

Universal health care based on need not ability to pay; compassion, quality of care, evidence-based approaches, and strong investment in preventive and promotive health as well as clinical care.

We have listed a number of questions for Session 3: Did the Government adopt the right public health strategy?

1. Is it too late to change approaches to the pandemic in the UK?
 2. Why has the Government chosen the strategy it has?
 3. What can we learn from countries who pursued an elimination strategy?
 4. What happened to the economies and the schools of those countries?
 5. What comparative impact has there been on the children, health services and communities of countries who pursued a 'Zero Covid' elimination strategy?
 6. Compare the implementation of 'Test & Trace' with the vaccination programme.
- 3.10: Is it too late to establish key public health approaches in localities for contact tracking, tracing and isolating with support?

Please briefly outline your testimony below or attach or reference an article which will provide the panel with relevant information.

Why has the government chosen the strategy it has?

Since early February 2020 the UK government strategy has been focused on containment and mitigation. In contrast, WHO policy, and that of states like South Korea, Taiwan, Japan, Singapore, China, Hong Kong, Vietnam, Thailand, New Zealand, Australia, and (to some

extent) Finland, Greece, Norway and Denmark, was to suppress the virus through effective public health measures.

Several factors may have contributed to the government's position:

- Inappropriate assessment of risk to the UK population in February 2020 by NERVTAG and SAGE.
- The lack of any independent public health or primary care scientific expertise on SAGE.
- The focus on pandemic influenza as the model for control rather than previous coronavirus epidemics such as SARsCoV1.
- The incorrect assessment in February 2020 that the UK could not mount a testing programme based on the limited PHE lab capacity (8 labs) rather than an appreciation of the actual NHS molecular virology lab capacity (44 labs) and additional university labs (eg Wellcome Sanger and Crick Institute).
- The failure to mobilise an appropriate contact tracing response to the virus in February 2020 unlike countries in Asia.
- The apparent failure of SAGE to take on board lessons from early exposed countries like Hong Kong, China and South Korea. The WHO Report on the China public health response published on Feb 24 2020 gave detailed analysis about how to suppress the epidemic quickly and effectively.
- SAGE's 'unanimous' view on March 13, once it was clear that Asian states were effectively suppressing their epidemics, that "SAGE was unanimous that measures seeking to completely suppress spread of Covid-19 will cause a second peak. SAGE advises that it is a near certainty that countries such as China, where heavy suppression is underway, will experience a second peak once measures are relaxed.". This analysis proved to be wrong. The attendees at this meeting were: Scientific experts: Patrick Vallance (GCSA), Chris Whitty (CMO), Steve Powis (NHS), Charlotte Watts (CSA DfID), Angela McLean (CSA MoD), John Aston (CSA HO), Sharon Peacock (PHE), Graham Medley (LSHTM), Neil Ferguson (Imperial), John Edmunds (LSTHM), Julia Gog (Cambridge), Brooke Rogers (King's), James Rubin (King's), Jeremy Farrar (Wellcome), David Halpern (CO), Osama Rahman (CSA DfE), Ian Diamond (ONS), Tom Rodden (CSA DCMS), Maria Zambon (PHE), Andrew Rambaut (Edinburgh), Jonathan Van Tam (Deputy CMO), Phil Blythe (CSA DfT), Wendy Barclay (Imperial). Note the absence of any independent public health or primary care expert/scientists.
- On March 13 SAGE "noted the importance of comparing UK interventions with those of other countries, such as Germany, and modelling the efficacy of those countries' interventions in the UK; some of these can be added as the epidemic progresses. They "noted that Singapore had had an effective "contain phase" but that now new cases had appeared." In fact these cases were rapidly suppressed and Singapore's death rate in March 2021 is 5 per million compared with the UK's 1851 per million. At this meeting there is no mention of test, trace and isolate, which apparently had not been modelled.
- SAGE and the government did not respond to alternative views of the need for more aggressive epidemic control, especially the alternative analysis submitted to SAGE on March 9 2020 by Professor Steven Riley from Imperial, a prescient report that was not apparently supported by Professor Neil Ferguson from Imperial and other modelers on SAGE. In his report he wrote "The UK is currently planning a mitigation response to the

COVID-19 epidemic rather than ongoing containment....there are no significant advantages of aiming for deliberate flattening (of the curve) over suppression and containment... Subject to detailed economic analysis, it cannot be cheaper to spend 18 months in a higher incidence $R=1$ regime (DF) than a low incidence $R=1$ regime (SC). Also, there is no reason for us to assume that the UK must stay with any given strategy for the duration of the pandemic. Therefore, attempting containment appears to be a more attractive strategy than “flattening the curve”These results directly support current advice from the

World Health Organisation are consistent with policy decisions made by China, Hong Kong, Singapore, Japan, South Korea and most recently Italy. Even if ongoing containment were to fail, we would have gained time and knowledge with which to decide our next strategy.” There is no reference to this paper in either the March 13 or 16 SAGE meetings attended by Professor Neil Ferguson even though Professor Riley’s findings directly oppose the SAGE recommendations. He concludes that “If the local human population responds to saturation of critical care with COVID-19 patients by reducing contacts such that transmission is close to $R=1$, there will be no benefit to attempting mitigation over attempting ongoing control. Rather, the epidemic will still last through to the time at which a vaccine may be available, far more people will be infected than would be the case with ongoing containment, and far more will die.”

- On March 16 SAGE minutes show the focus was on antibody testing and scale up of tests for diagnostic purposes “focused on intensive care units, hospital admissions and key workers...a solution is urgently required with a plan for implementation.” This was almost eight weeks after we had learned about a probable pandemic. There was no mention of test, trace and isolate which had already been stopped when the UK had fewer than ten deaths and probably around 5000 cases.
- The failure of the Prime Minister to attend the first five meetings of COBR which meant he did not interrogate the analysts nor inform himself about the threat and urgency of the situation. Pandemics lead to more casualties than war. A pandemic has consistently been the highest risk to the UK population in COBRA analysis. This failure of leadership was inexcusable.
- The lack of a pandemic response team, under clear and accountable management, which brought in experts in public health, primary care, intensive care, logistics, community mobilisation, social science and international pandemic control to complement the narrow expertise chosen for SAGE. The independent expertise brought onto SAGE was limited to clinical academia, mathematical modelling, virology and behavioural science.
- Throughout the UK government response to the pandemic, senior observers like Sir Paul Nurse, Nobel laureate and head of the Crick Institute, have asked ‘who is in charge?’
- The politicians have repeatedly said they are ‘following the science’. The science and medical advisers have repeatedly said that they advise but ‘Ministers must decide.’ This Catch-22 of shifting accountability by politicians and scientists has underpinned this disaster in my view.
- It is difficult to disagree with the statement of the Health Select Committee chair, the Rt Hon Jeremy Hunt MP that the UK response to the pandemic represented “the biggest failure of scientific advice to Ministers in a generation’.

How appropriate is it to use 'Herd Immunity' in the context of a lethal virus? And is the Government still relying on this?

Population or 'herd immunity' is a central concept in the epidemiology of infectious disease. The combination of natural infection and vaccination will reduce the number of susceptible people in a population. Depending upon the transmissibility of the infectious agent eg virus, a point will be reached at which the numbers of susceptible people has fallen to a level at which exponential growth is no longer possible (R value below one) and the epidemic will die out. For example, for an infection that is less transmissible eg smallpox, died out when population immunity reached around 70%. A highly transmissible agent like measles requires around 95% of the population to become immune before herd immunity kicks in. The arrival of a new more transmissible variant of the coronavirus has raised the threshold for herd immunity.

For a virus which causes trivial symptoms (like the common cold) natural immunity will lead to what is called an 'endemic equilibrium'. But for more serious viral infections we always seek vaccination as the method to achieve herd immunity. SarsCoV-2, the cause of Covid-19, has a fatality rate around ten times greater than seasonal flu. Further, in less vulnerable age groups, the risks of 'long Covid' and its unknown long term consequences, means allowing these populations to 'live with the virus' presents unacceptable risks. To consider natural immunity as the way to control Covid-19 infection is highly inappropriate. This raises the central dispute in Covid-19 control between

- a) those who wish to implement policies towards zero Covid through public health measures that will minimise the prevalence of infection until a vaccine is available to provide herd immunity, and
- b) those that simply wish to mitigate the infection (through lockdowns and shielding) to prevent health services being overwhelmed, allowing natural infection in less vulnerable groups to produce herd immunity until a vaccine is available.

What is meant by 'Zero Covid'?

The best analysis of Zero Covid comes from my colleague Professor Karl Friston in an unpublished piece I provide here:

What is zero COVID?

Zero COVID is an inclusive strategy that rests upon public health measures and population (a.k.a., herd) immunity to suppress community transmission.

Broadly speaking, there are two approaches to reducing viral spread. One can either remove infectious people from the population or remove people who are susceptible to infection.

Isolating infectious people is the objective of public health measures that isolate or quarantine people who can transmit the virus. We will refer to this as a containment strategy. The alternative is to reduce the number of susceptible people through vaccination and natural immunity. We will call this the herd immunity strategy. Both are problematic:

The containment strategy has an elusive endpoint – namely suppression – that is an inherently unstable (technically, it is an unstable fixed point or endemic equilibrium). This is because introducing infected people into a susceptible population will cause the virus to spread again. In the absence of eradication (i.e., elimination everywhere), a pure containment strategy would require certain populations to be eternally sequestered via

quarantine and border controls. Failures of quarantine would require ongoing mitigations that underwrite containment, such as lockdowns and travel restrictions.

Conversely, the herd immunity strategy has a stable fixed or endpoint, in which there is a constant rate of infection and associated morbidity. The level of this morbidity (e.g., long COVID) and accompanying mortality (i.e., death rates) depends upon the (potentially high) prevalence of infection at endemic equilibrium. Both containment and herd immunity strategies could be considered untenable. Is there another way?

Zero COVID is a third way that uses containment (i.e., public health measures) to minimise the prevalence of infection afforded by herd immunity. Elimination would correspond to a limiting case when the prevalence was zero that – in the absence of eradication – may be sustainable for periods of time; e.g., the elimination of measles.

What does zero COVID entail?

It requires a strategic acknowledgement that public health measures are a fundamental part of the strategy necessary to minimise the prevalence of infection under herd immunity. Practically, this means 'surge testing' and 'supported (or managed) isolation' wherever the prevalence of infection can increase. In other words, it requires a bilateral and sustained response, where equal emphasis is placed on vaccination and public health containment measures.

What are the likely long-term outcomes under zero COVID?

In the absence of global elimination (i.e., eradication), it is likely that low levels of prevalence will persist indefinitely. Over the next few years, with a contained spread of the virus and its variants – plus a global vaccination programme – all susceptible and exposed people should eventually acquire a degree of immunity, with the exception of young children who have not been exposed to the virus. This means viral transmission may become increasingly limited to young children – and the age demographics of transmission will shift towards the profile associated with seasonal influenza.

Clearly, this is speculative but it is the endemic equilibrium people have in mind when talking about repeated vaccinations – and the vaccination of children. If the pathogenicity of SARS-CoV-2 in younger age groups is negligible, this endemic equilibrium may be a suitable aspiration. In the interim, minimising prevalence in the general population is imperative.

What are the principles behind zero COVID?

The underlying principle behind zero COVID could be summarised as "leave no man behind". In other words, the question is not "what is the best intervention?" It is "which intervention is failing?". For example, a failure to implement proper public health measures could result in a high prevalence endemic equilibrium under a herd immunity strategy. Similarly, a myopic focus on containment will lead to a never-ending cycle of lockdowns and quarantine. This principle applies at all scales. For example, isolating infected people within their community, and isolating infected communities with travel restrictions. So, what kinds of containment measures do we have at hand for minimising prevalence?

The many faces of containment

Formally, containment precludes exponential growth. Exponential growth (as scored by the R-number) is the product of three factors. Namely, contact rates, transmission risk and the mean period of infectiousness. This nicely partitions the different interventions that can be

deployed: contact rates are reduced by lockdowns, travel restrictions and quarantine. Transmission risk is reduced by socio-behavioural responses, such as mask wearing and social distancing. Finally, the infectious period is the target of public health measures that aim to find and isolate infectious people. The ensuing three levels of interventions work hand in hand – and are therefore all necessary components of a containment strategy. But, how would this be deployed under zero COVID?

Strategic implications

Containment requires an escalation of public health measures in any community with the potential for exponential growth in viral transmission. One can leverage this in a clear and quantitative fashion by noting that – for any community with a given prevalence of infection – there is a critical incidence that corresponds to a (transient) endemic equilibrium, where R is exactly one. This means that enhancing containment measures in communities that exceed this threshold will reduce the R -number and preclude exponential growth. Prevalence will then fall, underwriting the imperative to minimise prevalence. This strategic approach has four implications:

1. Containment and public health measures should be deployed in response to the incidence of infection in a context-sensitive way, where the context depends upon the local level of prevalence: e.g., at the level of (lower tier) local authorities.
2. These responses are time-sensitive and are specified by the incidence and prevalence of infection. In short, there is a clear and quantitative way of implementing zero COVID in terms of threshold crossings.
3. Although thresholds can be defined precisely it may not be possible to predict when these thresholds will be reached or breached. This precludes a roadmap with predefined dates.
4. Finally, zero COVID requires precise and accurate real-time estimates of incidence and prevalence.

Do we have appropriate epidemiological measures for zero COVID?

To implement the containment part of zero COVID, real-time estimates of incidence and prevalence are required at an appropriate level of granularity. These estimates are available but have not, so far, been used to inform local or national responses. Rather, national responses appear to be predicated on retrospective estimates based on proxies such as the incidence of new confirmed cases or hospital admissions. This is problematic for two reasons.

1. Estimates of the R -number based upon (Bayesian regression) curve fitting of past data are, necessarily, out of date (usually by 16 days). This lag precludes their use in guiding real-time interventions (e.g., ‘surge testing’). Real-time estimates furnished by data assimilation and deconvolution procedures are therefore necessary.
2. Basing criteria on the incidence of confirmed cases (e.g., a certain number per hundred thousand per week) is not useful. This is because the incidence of confirmed cases fluctuates with testing rates, the relative sensitivity of different tests (e.g., PCR versus LFD), and (self) selection biases (e.g., who is tested). Finally, fixed incidence thresholds do not accommodate local prevalence. This calls for estimation of the latent incidence and prevalence under an appropriate convolution or generative model.

Summary

Zero COVID is a principled and inclusive strategy that combines monotheistic approaches; namely, containment and herd immunity. Zero COVID rests upon basic epidemiological principles and established public health measures that are the cornerstone of infectious disease control. The objective is to realise a minimum prevalence endemic equilibrium based upon real-time quantitative estimates of local prevalence and infection. The 'zero' in zero COVID is not about eradication. It connotes a zero tolerance of viral spread. It mandates that no door should be left open to COVID-19.

A further analysis of zero Covid in relation to the current 'roadmap' is provided in this blog. <https://blogs.bmj.com/bmj/2021/02/25/karl-friston-and-anthony-costello-a-measured-approach-to-zero-covid/>

Could the Government have used the dramatic drop in cases in the summer to pursue an elimination strategy?

Yes. We reached a low of around 500 positive cases per day in early July 2020. If the government had built in proper containment measures by investing in local public health teams and strengthening them with up to 40,000 drawn from the 750,000 volunteers there was no reason why we couldn't have kept this epidemic suppressed as they did in Asia.

<https://www.theguardian.com/commentisfree/2021/mar/06/nhs-volunteers-fight-covid-community-health-workers-asia-contact-tracing-vaccine>

Compare the implementation of 'Test & Trace' with the vaccination programme.

The success of the vaccination programme is almost entirely due to

- a) the scientists in Germany and Oxford and the USA who developed the vaccines,
- b) government procurement teams who purchased vaccines from the drug companies speedily and in sufficient quantities,
- c) the NHS primary care network teams and district public health teams who have scaled up the roll-out with the help of the Department of Health and Social Care and Public Health England.

A successful test, trace and isolate programme, based on the experience of Asian states, should have been organised locally with attention to public health detail and sufficient field staff. <https://www.independentsage.org/statement-on-the-management-of-nhs-test-and-trace/> October 30 2020

As cases continued to rise throughout last year, the UK government did roll out a test, track and trace system – separate from the NHS using outsourced contracts (unlike the vaccine programme to come), with limited effectiveness, and little incentive for self-isolation. The cost of the programme has been astonishingly expensive with £37 billion spent or set aside. It was described by a former permanent secretary to the Treasury as "the most wasteful and inept public spending programme of all time".

The government has now failed four times to implement a successful test and trace programme: in February/March, July, September and December 2020. As a consequence we have suffered three national lockdowns with severe economic impacts, especially on the poorest citizens of our country.

At a press briefing in April 2020, Dr Jenny Harries, the deputy chief medical officer, suggested that testing and COVID19 deaths were not necessarily directly linked. She also

said that WHO's policy of 'find, test, trace and isolate' (which should be done by 'acting fast') was "more geared to low and middle income countries than the UK".

One key aspect of the programme failure has been a lack of attention to monitoring of and support for isolation of cases and contacts. What we do know is that if we cut the time between a person being infected and self-isolating, we can bring transmission and the R value down with much less disruption than through national lockdowns. To achieve this requires effective community test and trace, full financial support, monitoring of isolation and clinical follow-up. However, what we are seeing is a scaling back of this programme. Sick pay rates are under [£96 a week](#), unless you're one of the 2 million people who earn less than £120 a week, in which case you get nothing. In Canada or New Zealand, you [would receive](#) the equivalent of £287 or £308 a week in the UK.

The ineffective test, trace and isolation programme is the gaping hole in the government strategy. We should remember that most of the countries that went for an intensive elimination strategy had no national lockdown, their economies are thriving and their people look forward to their vaccines with little local mutation risk. The government did not invest in a robust community protective shield, isolation has been wholly inadequate, it allowed the virus to spread, and plans to do so in future. Let us hope the vaccines do work because if not, the only way out is more lockdowns.

<https://www.theguardian.com/commentisfree/2021/feb/10/support-self-isolation-uk-covid-vaccination-effort-virus-replicate-mutations-vaccines>

What can we learn from countries who pursued an elimination strategy? What happened to the economies and schools of those countries?

South Korea introduced intensive testing, tracing and isolation when they had just 5 deaths around February 20 2020. They mobilised 70 field teams to do intensive testing in two provinces where cases had emerged, and had all cases isolated, supported and carefully monitored by clinicians and community health workers. Families were financially supported to ensure they complied with isolation. Their epidemic was suppressed within 3 weeks, with just 250 deaths. A year later they have a death rate of 33 per million population. China did the same. Within two weeks of the explosion of cases in Wuhan city, they mobilised 9,000 community workers for tracing and isolation support to cover a population of 11 million people in Wuhan.

Food and medicines were provided, allied to financial support to cover rentals and living costs, and guaranteed employment. China also devoted serious attention to media coverage, and through 24 hour TV stations in each province, shared information, preventive messages, local data, stories and news items. China's death rate in March 2021 is 3 per million. The UK death rate is 1860 per million.

What comparative impact has there been on the children, health services and communities of countries who pursued a 'Zero Covid' elimination strategy?

None of the Asian states has had a full national lockdown, relying only on local lockdowns, and intensive finding of cases, testing, contact tracing and isolation. They have all faced minor flare-ups of infections over the winter which they have rapidly suppressed.

Schools remain open, where pupils wear masks and ventilation of classrooms and social distancing is maintained. Health services are largely unaffected by the pandemic given a low burden of infection. Communities go about their daily lives without hindrance or lockdown.

In China the economy grew 2.3% last year, despite Covid-19 shutdowns causing output to slump in early 2020. Strict virus containment measures and emergency relief for businesses helped the economy recover. Growth in the final three months of the year picked up to 6.5%. <https://www.bbc.co.uk/news/business-55699971>

After a decline in GDP of 3.3 percent in the second quarter, the South Korean economy finished the year only down 1 percent, the smallest drop of any OECD member. Weaknesses still remain in the services sector and future mutations of COVID-19 could affect economic growth in 2021, but the [strong second half export performance](#) in goods, and the corresponding investment it spurred, helped South Korea avoid a deeper recession in 2020.

<https://thediplomat.com/2021/02/the-impact-of-covid-19-on-south-korean-trade-in-2020/>

The UK headline gross domestic product (GDP) declined by 9.9% in 2020 following growth of 1.4% in 2019. In early 2021 the economy slipped back into recession. Unemployment rates are the highest in four years although many jobs have been protected by the furlough scheme. UK borrowing has reached a record in peacetime in the past 100 years.

<https://www.theguardian.com/business/2021/jan/29/uk-economy-suffering-most-damage-since-first-wave-of-covid-19>

<https://www.instituteforgovernment.org.uk/explainers/cost-coronavirus>

Is it too late to establish key public health approaches in localities for contact tracking, tracing and isolating with support?

No. At the Science and Technology Select Committee meeting on March 15 2021, Sir Patrick Vallance said that as case rates fell, test, trace and isolation would become more important as a strategy to avoid further lockdowns.

There is no apparent reason why we could not have emulated Asian countries. The English epidemic began with hotspots in London and the West Midlands. We could have broken transmission chains if we had mobilised local test and trace capacity during February and early March, with proper incentives for isolating households, and community facilities provided for less severe cases.

But the 'scientific advice' supplied to the government was erroneously based on the 2011 pandemic influenza plan, which determined there was no point in stopping the spread of infection. On 13th March 2020, SAGE minutes reported the unanimous view that China and other Asian states would inevitably face a sizeable second wave. This hasn't happened.

Asian death rates are 50-1000 times lower than in the UK which currently has a death rate of 1860 per million. In January 2021, Asian states have seen minor flare-ups, which they have tackled aggressively with mass testing, community contact tracing, supported isolation and local lockdowns.

At the same meeting on March 13 2020, the SAGE committee did not

A UK CORSAIR study of 2,240 people in May 2020 showed that of those who reported symptoms of COVID-19 in the previous seven days, only 18.2% said they had not left home since developing symptoms

(<https://www.medrxiv.org/content/10.1101/2020.09.15.20191957v1>)

Remarkably, 75% of those with someone in their household with COVID-19 symptoms had left home in the last 24 h. The volume of outings and shopping for non-essentials indicated non-adherence to lockdown. In the CORSAIR studies, the main self-reported reason for low adherence was mild or reducing symptoms, which suggests that people need more information about symptoms and better understanding of why they are self-isolating. Financial factors were key: demographic data in the CORSAIR study show that low paid people were among those least likely to self-isolate for the full period; and financial reasons were clear from the self-reports.

Our government now faces unenviable choices. A secondary wave of cases with a new and more transmissible variant has surged across the country, particularly affecting more deprived areas, making test and trace more difficult. Roll-out of vaccination is the government's principal, and possibly only, strategy, but the earliest estimate for all adults to be vaccinated is August 2021. Vaccination in the presence of high transmission risks further mutation of the virus. Strengthening measures to break community transmission should remain a priority.

<https://www.independentsage.org/a-sustainable-suppression-strategy-for-keeping-society-open/>

<https://www.independentsage.org/strategy-for-covid-19-maximum-suppression-or-mere-containment/>

What impact has Government public health strategy had in the pandemic on frontline and low paid workers and what is needed to reduce these risks?

Independent SAGE has written extensively on inequality and ethnic minority vulnerability in the pandemic. See several reports and interviews mentioned here:

<https://www.independentsage.org/category/inequality/>

The following report summarises key facts and figures about the impacts on poorer and frontline workers:

<https://www.independentsage.org/covid-19-and-health-inequality/>

And here is an interview with Dr Zubaida Haque of Independent SAGE

<https://www.miphealth.org.uk/home/news-campaigns/Features/interview-zubaida-haque-independent-sage.aspx>

In addition to vaccines, national control measures and financial support, one key issue is making workplaces safe. As Stephen Reicher has written “When the government relaxed restrictions in July, they handed over responsibility to employers and owners of facilities to make their premises safe but with limited guidance, minimal support, and virtually no formal regulation. While many enterprises have worked assiduously to ensure that adequate Covid mitigations are implemented, this is not true of all. It is now critical to ensure that we have robust systems to prevent the spread of infection. This should include

funds for necessary changes, inspection of all premises and certification of those meeting the required standards. This would have the added advantage of increasing public confidence in using certified premises (shops, hospitality etc).”

<https://www.theguardian.com/commentisfree/2020/dec/28/covid-vaccine-uk-restrictions-independent-sage>

I confirm that the opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

Anthony Costello

19/03/2021

SIGNED

DATE

Please return to Inquiry@keepournhspublic.com

Thank you
Olivia O’Sullivan
Secretary to the panel
The People’s Covid Inquiry