Written Evidence Submitted by Professor Carl Heneghan and Professor Sunetra Gupta, University of Oxford (CLL0117)

To the Chairs Rt Hon Jeremy Hunt MP and Rt Hon Greg Clark MP

Re: to correct the record for the evidence given on 26 May 2021 to The joint inquiry of the Health and Social Care Committee and Science and Technology Committee

On the 26 May 2021, Dominic Cummings gave evidence to the inquiry of the joint inquiry of the Health and Social Care Committee and Science and Technology Committee, where he cited a meeting on the 20 September 2020

> 'Then, on the Sunday evening, there was a meeting with a combination of SAGE scientists and some external people.'

Dominic Cummings evidence further cited for the record ourselves

> 'By this point, unfortunately, the Prime Minister was listening to various people who were saying things like, "There's already herd immunity in the population; there won't be any second wave, etc, etc." So we had the meeting in the Cabinet Room on Sunday evening. Patrick and Chris gave their view. A guy called Heneghan and a woman from Oxford called Professor Gupta, I think it was, gave the kind of "Don't lock down" view.
>
> John Edmunds, who is on SAGE, said, "Surely we are going to learn the lessons of March. Here's what the data will be. The only logic of not doing a lockdown now would be that you are not going to do it at all. There is no way that you are going to make that decision. Just do it now; otherwise it's all going to be worse." The Prime Minister said, "I'm not persuaded of that." We then had the hypothetical meeting of the future, and a brilliant young woman called Catherine Cutts, who we brought in from outside Whitehall, presented all of this data.'

Professor Gupta and Professor Heneghan received invitations on 18 September at 17:36 from the Cabinet Office.

'The Prime Minister would like to invite you to a small meeting this **Sunday (20 September) at 5.30 pm**, to be held via Zoom.

In this meeting, we would like you to set out your current scientific assessment of the situation for discussion with other members of the scientific community. The meeting will discuss the following question: "Should government intervene now, and if so, how?"'

As part of the invite, we were asked to submit a one-page summary of the points to be discussed.

'To facilitate the discussion, we would be grateful if you could send through a one-page note (including any evidence or academic papers you will refer to) ahead of the discussion – by 5 pm Saturday to c-19taskforce.scienceprojects@cabinetoffice.gov.uk.'

Papers for the meeting were circulated on 19 September 2020 at 18:39:39 BST

We are attaching these submissions as appendices for the record.

Statements submitted by Professor Gupta contradict the statement "There's already herd immunity" referred to by Dominic Cummings.

"A fundamental problem with Covid-19 is that we cannot measure how close we are to HIT (this was my original intention in March when we developed neutralising antibody assays [1] for SARS-Cov2) because (i) there are no reliable markers of exposure (ii) HIT is a function of R0 and of heterogeneities in susceptibility to infection [2-4], neither of which we can easily measure."

Professor Gupta's submission further contradicts there will be no second wave as the evidence discussed sets out two alternative paths:

'The first is to bring in population-wide restrictions to keep infection levels down until a vaccine becomes available. This would come at a huge social and economic cost, and it is not clear that such a policy is sustainable until the development of a safe and effective vaccine, upon which it is predicated.'

'An alternative solution would be to take steps to protect the vulnerable sectors of the population, while allowing those that are at low risk to accumulate immunity such that the risk to the former is reduced as rapidly as possible to levels that we accept for other respiratory pathogens.'

Professor Heneghan's Submission stated:

'the current strategy requires acknowledging the virus is endemic and the need to learn to live with COVID.'

Professor Heneghan's submission also reported the potential impact of seasonality:

'there could have been consideration of a 'Xmas break - 5000 more deaths a week will occur at the height of the seasonal ILI effect. Xmas

can be extended for schools by 2 weeks with minimal disruption because of planning lead-in time. Could act as a breakwater at the height of viral respiratory illness "season".'

A statement that is incompatible with there would be 'no second wave'.

Professor Heneghan's submitted evidence pointed out that there will be more deaths, but there needs to be context and that the aim over the winter should be:

'To control the spread of acute respiratory illness while minimising societal disruption that would require a COVID control strategy (8- month plan) with back to near normal by May 2021.'

Professor Heneghan's evidence also pointed out the urgent need for a Care Home plan; enhanced hospital infection control; a work from home strategy; changes to the messaging, improvements in the interpretation of testing, an increased Xmas break due to the increased transmissibility of respiratory pathogens in mid-winter and the formulation of an Intelligence Unit to better understand the data.

The recollection Dominic Cummings gave to the committee of a crucial meeting between Boris Johnson, advisors and ourselves was incorrect. We would, therefore, welcome the opportunity to correct the record of the evidence, as reported in Hansard on the 26 May 2021, given to the joint inquiry of the Health and Social Care Committee and Science and Technology Committee

We look forward to your response Yours

Faithfully

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Carl Heneghan Cabinet Office Briefing:

Government meeting 20th Sep: COVID Control strategy

Interchangeable terms of control, elimination and eradication are often used but poorly understood. The WHO: 'control is a reduction in the incidence, prevalence, morbidity or mortality of an infectious disease to a locally acceptable level; elimination as a reduction to zero of the incidence of disease or infection in a defined geographical area; and eradication as permanent reduction to zero of the worldwide incidence of infection.'

The current strategy requires acknowledging the virus is endemic and the need to learn to live with COVID.

Recent responses are out of proportion to the threat. They are underpinned by a lack of understanding of the data, the role of community pathogens and an overreliance on predictive modelling. Thinking has been distorted by three decades of "influenza preparedness as if there were no other pathogens with pandemic potential.

- Spain provinces appear well past local peak by date of symptoms. (see here); greater number of cases are asymptomatic (see here); if the rate of growth maintained exponential rise, the daily level would be above 200,000 bynow.
- In reply to a 2017 parliamentary question – Children's admissions double/treble from Aug toSept
- RCGP surveillance shows cases of acute respiratory infection increased by >50% in a week to 67 per 100k. Current COVID cases are increasing somewhat in line with this (seasonal effect)

- Symptomatic consultations will increase 4 to 8-fold into winter
- Roughly one in thirteen (7.8%) deaths with COVID-19 on the certificate did not have COVID as underlying cause of death; this proportion has risen to 29% for the last eight weeks of reporting.

COVID control strategy (targeted measures that protect the most vulnerable from COVID)

A strategy built around control (scenarios of elimination and eradication not viable).

Aim: To control the spread of acute respiratory illness while minimising societal disruption COVID control strategy (8-month plan) back to near normal by May 2021

- Care Homes plan - urgently needed - signal already in the data (82% of the outbreak occurred within 8 weeks in Spring). Actions: new minister care homes; 20% increase in staffing (no moving between homes (evidence for this); intensive clinical care home team in the community (keep in home at all costs). Germany's CFR same in the elderly, fewer cases, explains lower death counts.
- Enhanced hospital infection control – requires transparency around nosocomial infections.
- 50% work at home strategy (intervention on social distancing with low impact on productivity)
- Young people - simplify the message, too confusing, losing their trust
- Seeking to increase the personal threat perception of COVID should now be reconsidered
- Testing- switch of testing in primary schools (evidence children to adults transmission is limited).
- Universities set up their own testingfacilities.
- Abandonment of the binary test result Y/N, creation of management protocols at all levels which require more information but allow focus on what is important - Cycle threshold (Ct) to direct tracing strategy to those most likely to be infectious (Ct<30).
- Xmas break - 5000 more deaths a week will occur at the height of the seasonal ILI effect. Xmas can be extended for schools by 2 weeks with minimal disruption because of planning lead-in time. Could act as a breakwater at the height of viral respiratory illness "season".
- The road ahead will be bumpy, and there will be more deaths but there needs to be context. The public is fed the daily diet of Covid - deaths are currently lower than influenza/pneumonia.

Intelligence Unit

There is an enormous amount of data becoming available every week. The general quality is improving but overall, still poor. A systematic approach to gather and sort these to separate facts from opinions is required.

- Current interventions poorly thought through and not having the desired effect-. We are working with WHO to provide two weekly updates on transmission. Understanding what makes a difference to transmission crucial

- Better use of data - how many asymptomatic, use of cycle thresholds, improved (for all ILI)-local hospital trust data on the impact of disease (small group of trusts and rapidly upscale)
- Robust testing of interventions - no need to rush headlong in - we are none the wiser if we do this

A wider group of healthcare expertise required to inform next steps (primary care not represented)

Sunetra Gupta Cabinet Office Briefing:

BRIEFING NOTE & RECOMMENDATIONS

Professor Sunetra Gupta

The key issue to consider in directing policy is whether or not it is justified to take extraordinary measures in response to Covid-19 – given that no extraordinary measures are in place for other infectious diseases such as influenza, pneumococcal pneumonia, and indeed other coronaviruses. We have reached an accommodation with these other diseases and accept that they cause a level of disease, suffering and death, but not sufficient to change our way of life. Given that it is not possible or realistic to attempt to eliminate Covid-19, our goal should be to achieve levels of herd immunity that permit the same situation to prevail with Covid-19.

The term 'Herd Immunity' has become misunderstood - as shorthand for a policy that indiscriminately allows the virus spread, thus putting the population (vulnerable and non-vulnerable) at risk; and as the level of immunity in a population that causes the pathogen to disappear. Neither definition is correct: Herd Immunity is not a policy: it simply describes the state of progress of an epidemic and the Herd Immunity Threshold (HIT) defines the proportion immune at endemic equilibrium. The segments of a population that are vulnerable to dying from the pathogen can enjoy a reduced (but not zero) risk of infection once HIT is achieved, and this risk can be further reduced with a vaccine.

A fundamental problem with Covid-19 is that we cannot measure how close we are to HIT (this was my original intention in March when we developed neutralising antibody assays [1] for SARS-Cov2) because (i) there are no reliable markers of exposure (ii) HIT is a function of R_0 and of heterogeneities in susceptibility to infection [2-4], neither of which we can easily measure. A comparison of the dynamics of Covid-19 in different settings would suggest that the acquisition of immunity in the population is already playing a role in keeping infections down.

Let's now examine how HMG might manage public expectations and policy towards achieving the necessary levels of herd immunity that will put Covid-19 on a par with the large set of respiratory pathogens that affect the human population.

As a first step, we could conduct tests to establish the risks of influenza *and* Covid-19 simultaneously in the population. Only if the risk of death from Covid-19 is higher than that of influenza, would extraordinary measures be justified. In other words, we need to set the *context* more clearly for the measures taken. Should the risk of death from Covid-19 be higher than that of influenza, we are presented with two solutions. The first is to bring in population-wide restrictions to keep infection levels down until a vaccine becomes available. This would come

at a huge social and economic cost, and it is not clear that such a policy is sustainable until the development of a safe and effective vaccine, upon which it is predicated.

An alternative solution would be to take steps to protect the vulnerable sectors of the population, while allowing those that are at low risk to accumulate immunity such that the risk to the former is reduced as rapidly as possible to levels that we accept for other respiratory pathogens. We should capitalise on the very low rates of death with Covid-19 in much of the population, while permitting and supportting the rest to adopt social distancing measures commensurate with their risk.

1. https://www.medrxiv.org/content/10.1101/2020.04.13.20060467v2
2. https://www.medrxiv.org/content/10.1101/2020.07.15.20154294v1
3. https://www.medrxiv.org/content/10.1101/2020.04.27.20081893v3
4. https://www.medrxiv.org/content/10.1101/2020.09.01.20185876v1

(4 June 2021)