Evidence about the Likely Impact on the NHS

14 February 2020: RWCS Clinical Alignment Planning Meeting: [INQ000047779]

- Page 2, para 2: The CMO said that "*when we move into phase 2 the models can help us work out how long we have got until it hits the NHS in large enough numbers to be [sic] noticeable. There will probably be several weeks between transmission becoming established in the UK and substantial impact on NHS services.*"

27 February 2020: SAGE meeting [INQ000203874]

- Page 1, para 9: "*The case fatality and infection fatality rates only reflect deaths as a direct result of infection, not those related to NHS overload or other second order effects.*"

28 February 2020: Briefing from Katherine Hammond [INQ000146569]

- Page 2, para 6: "*...In this reasonable worst case scenario, one or several waves of Covid-19 will infect about 80% of the UK population, and up to 1% of this group will die as a direct result of the infection (other NHS patients may also die because of NHS overload but this has not yet been modelled).*"

- Page 3, para 14: "*Even if it is not possible to contain the epidemic, it may be possible to delay and lower its peak. This has major operational advantages, as it pushes it further beyond the winter pressures on the NHS and lowers the worst pressures.*"

2 March 2020: COBR meeting [INQ000056217]

- Page 6, para 9: "*The NHS would be severely disrupted by the outbreak and that modelling for the potential hospital bed requirements was underway. Whether the NHS had enough ventilation capacity.*"

9 March 2020: COBR meeting [INQ000056219]

- Page 5, para 5: "*The GCSA said that there were two aims of intervention measures: reducing the peak of the virus to enable the NHS to cope with demand and to reduce the mortality rate.*"

- Page 6, para 7, 6th bullet point: "*...The question remained as to when Intensive Care Unit capacity would be increased and if a Covid-19 specific team or unit was needed in every hospital.*"

11 March 2020: Cabinet meeting [INQ000056132]

- Page 5, subsection (c): "*although the NHS-111 helpline service was under extreme pressure, the NHS-111 online service had responded well. Similarly, there had been an increase in online consultations with GPs;*"

11 March 2020: Paper from SAGE to DHSC titled 'Mitigation versus Prevention' [INQ000149035]

- Page 1: "*The negative aspects of the RWC are the number of severe illnesses and deaths and the strain that the number of illnesses will place on the NHS.*"

- Page 1: "*The current strategy is for mitigation, i.e. introducing BSI that will lower and delay the peak, buying time for preparation and reducing the period that the NHS is over-capacity.*"

- Page 1: "*Failure [of the mitigation strategy] might be triggered by either the number of deaths or the overwhelming demand on the NHS making it politically impossible not to intensify control measures, leading to more intensive social distancing being introduced.*"

11 March 2020: COBR meeting [INQ000056220]

- Page 8, para 15: "*The CHAIR invited NHS England to update on the NHS reasonable worst case scenario planning. The CHIEF EXECUTIVE OF NHS England said that in that scenario, services would be under extreme pressure, but that in the event of a lower infection rate than in Lombardy, lower, but nonetheless high, pressure would still be experienced. Those mildly symptomatic would be urged to stay at home. Tests would be undertaken on all patients who were admitted with COVID-19 symptoms. These tests would enable scientists to establish when the UK was in its epidemiological curve. Elective surgery would need to be postponed, which could release 30,000 beds - an equivalent of 60 hospitals across the UK. It was also noted that they were likely to see sickness absence across the NHS. Therefore there was a need to licence 18,000 nurses in the final six months of their study to bolster staffing, and engagement was underway with colleges to enable that process. Work was also underway on supply chains, seeking to ensure the necessary respiratory support.*"

12 March 2020: COBR meeting [INQ000056221]

- Page 5, para 2: "*...The GCSA said that the aim was not to completely suppress the spread of the disease, not only was this not possible, but it would likely lead to a larger second peak later in the year when the NHS may be under increased pressure. Instead, Government interventions should seek to change the shape of the epicurve, ideally delaying the peak until summer when transmission may be lower (although they noted the scientific basis for this is uncertain) and flattening the peak so as not to completely swamp NHS resources.*"

- Page 5, para 5: "*School closures could have a direct impact on the NHS workforce if staff could not work due to childcare.*"

- Page 6, para 5: "*Advice to the devolved administrations had suggested that school closures could reduce peak hospital demand by 10 - 20 per cent…the NHS would not find this crisis easy to deal with and there was still significant work to be done to increase its capacity to respond.*"

- Page 8, para 13: "*If option one was to be announced the following day there could be a huge surge in the number of people phoning NHS 111 immediately after the announcement, this could deluge the system meaning that a number of people requiring urgent triage, for example for septicemia, would not get through and would be seriously impacted as a result.*"

13 March 2020: SAGE meeting [INQ000109142]

- Page 2, para 3: "*SAGE is considering further social distancing interventions – that may best be applied intermittently, nationally or regionally, and potentially more than once – to reduce demand below NHS capacity to respond.*"

- Page 3, para 19: "*SAGE further agreed that one purpose of behavioural and social interventions is to enable the NHS to meet demand and therefore reduce indirect mortality and morbidity. There is a risk that current proposed measures (individual and household isolation and social distancing) will not reduce demand enough: they may need to be coupled with more intensive actions to enable the NHS to cope, whether regionally or nationally.*"

- Page 3, para 20: "*SAGE requested that SPI-M investigate what kinds of interventions might be sporadically or continuously implemented to enable the NHS to meet demand , and at what points, and to set out its confidence levels in the impacts of these interventions.*"

14 March 2020: Whatsapp messages on the 'CSA-CMO-Matt-PM-Dom' Group: [INQ000048399]

- Page 4, near the top of page: Dominic Cummings: "*4/ To stop NHS falling over means doing a bunch of stuff roughly 2-3 weeks (I think??) before we think the crunch point is cos there is a time lag on the effects and the cases already in the system feeding through to ICUs ....*"

- Page 4, 14/03/2020 7:30:41pm Chris Whitty: *"Broadly agree all 4 points Chris."*

15 March 2020: Presentation regarding Covid-19 measures [INQ000279910]:

- This document outlines various measures and their potential impact as modelled.

15 March 2020: Covid-19 Dashboard [**INQ000146582]**

- Page 5: "*SAGE Conclusions - Likely to place severe demands on even the most developed healthcare systems Approximately 5% of cases will require hospitalisation (i.e. at least oxygen support) Of these, 30% will require ventilation – preferably mechanical ventilation (i.e. ICU facilities) These are now NHS central case planning assumptions.*"

- Page 5: "*Interventions: Tuning behavioural and social interventions (BSI) to minimise the epidemic without giving a second peak can halve deaths, reduce peak by ⅔ But remaining peak still overwhelms UK surge critical care bed capacity by 8-fold Remaining within the surge capacity of the NHS will require more intensive social distancing Measures will need to be introduced in the next 2 weeks, 3 maximum These measures will need to be in force (perhaps intermittently) into 2021 to avoid a resurgence of transmission*"

16 March 2020: SAGE meeting [INQ000075664]

- Page 2, para 1: "*On the basis of accumulating data, including on NHS critical care capacity, the advice from SAGE has changed regarding the speed of implementation of additional interventions.*"

- Page 2, para 4: "*SAGE will further review at its next meeting whether, in the light of new data, school closures may also be required to prevent NHS capacity being exceeded.*"

- Page 2, para 10: "*The objective is to avoid critical cases exceeding NHS intensive care and other respiratory support bed capacity. The figures for capacity are now clear but intensive care bed capacity will increase by 20% or more.*"

- Page 2, para 11: "*It is vital to understand numbers of cases regionally relative to NHS capacity, to know where local more stringent interventions might need to be introduced.*"

- Page 2, para 12: "*With sufficient interventions (assuming they are implemented and adopted effectively for a sufficient period of time), modelling indicates it may be possible to keep cases below the NHS's critical and respiratory care capacity.*"

- Page 2, para 16: "*SAGE cannot be certain that the measures being considered by HMG will be sufficient to push demand for critical care below NHS capacity but they may get very close under the RWC scenario.*"

- Page 2, para 17: "*While SAGE's view remains that school closures constitutes one of the less effective single measures to reduce the epidemic peak, it may nevertheless become necessary to introduce school closures in order to push demand for critical care below NHS capacity. However school closures could increase the risks of transmission at smaller gatherings and for more vulnerable groups as well as impacting on key workers including NHS staff. As such it was agreed that further analysis and modelling of potential school closures was required (demand/supply, and effects on spread).*"

- Page 2, para 18: . SAGE agreed that its advice on interventions should be based on what the NHS needs and what modelling of those interventions suggests, not on the (limited) evidence on whether the public will comply with the interventions in sufficient numbers and over time.

16 March 2020: COBR meeting [INQ000056210]

- Page 4, para 1: "*On the basis of the NHS capacity model, further action should be taken. There are now 35 confirmed deaths and a further 20 unannounced. There were 55 cases in Intensive Care Units.*"

18 March 2020: Covid-19 Strategy Ministerial Group meeting [INQ000056261]

- Page 4: "*THE CHIEF EXECUTIVE OF NHS ENGLAND said that NHS resilience work had begun, including on assertive discharge from hospitals into the community, with an estimated 16,000 people to be released in 21 days. The plan also included deferring non-urgent surgery, repurposing theatres and retraining anaesthetists to use ventilators.*"

18 March 2020: SAGE meeting [INQ000061525]

- Page 3, para 2: "*SAGE advises that available evidence now supports implementing school closures on a national level as soon as practicable to prevent NHS intensive care capacity being exceeded.*"

- Page 3, para 4: "*Reliable data on the health impacts of existing interventions will only be available in 2 to 3 weeks. This would not be in time to inform judgements on additional interventions to limit NHS pressures, which are likely to be significant within 2 to 3 weeks. It may be possible to collect intermediate data, and this should be a priority.*"

- Page 3, para 13: "*Modelling suggests that, without mitigation, London could reach COVID-19-related intensive care capacity by early April.*"

18 March 2020: Paper from the CMO to the Prime Minister and SoS titled 'Protecting London' INQ000048120

- Page 1, para 2: "*Based on current trends, assuming no effect from current mitigations London's normal ICU capacity will be full in 15 days. This is based on numbers doubling every 5-6 days. As the capital has 800 ICU beds and 100+ are currently occupied, in 15 days capacity will be breached assuming all ICU beds can be allocated to COVID-19 patients.*"

- Page 2, para 9: "*This is an uncertain and moving picture. SAGE advise they will have a better understanding what the impact of the current measures on infection rates in two to three weeks. Unmitigated ICU capacity will decrease significantly in London over that time and normal capacity may be exceeded.*"

- Page 2, para 17: "*The CMO advises that we do not yet have the data to make a fully informed decision on the likely effect of existing measures. Specifically we do not yet know the behavioural impact of and adherence to the measures announced on Monday, in particular on social distancing. Whilst it will not be possible to wait for epidemiological data based on the short timeframes before ICU capacity is exceeded, data on adherence to current measures on which modelling assumptions are based can be determined more quickly.*"

18 March 2020: COBR meeting [INQ000056211]

- Page 5, para 2: "*....The GCSA said that without further interventions they expected London was approximately 2-3 weeks away from Intensive Care Units (ICUs) being full with COVID-19 patients.*"

- Page 5, para 3: "...*The GCSA said that even if social distancing measures were increased London remained at risk of exceeding its ICU capacity. Modelling suggested that school closures would play an important role in helping to ensure that ICU demand was not exceeded. The Scientific Group for Emergencies (SAGE) estimated that school closures could potentially reduce COVID-19 cases by 10-15 per cent - and below the threshold for breaching ICU capacity. SAGE modelling had been offset by an expected increase in use of grandparents for childcare - more likely to be used by single parent families. Modelling assumed that schools should be kept partially open to ensure that key workers could continue to contribute to the national effort. For example an estimated 15 percent of the NHS's workforce would be impacted by school closures. SAGE modelling suggested that if school attendance was limited to 10-20 per cent the social distancing effect would be equivalent to 60-70 percent of a total shutdown.*"

19 March 2020: No.10 officials meeting [INQ000232070]

- Page 1: "*CMO was strong on the fact that measures already introduced + school closures should – with 75%+ levels of compliance – reduce the levels of transmission so that r falls below 1 and that we won't be able to assess that for 2-3 weeks. He was also clear that there's no world in which London ICU capacity isn't comfortably exceeded, and so we shouldn't be messaging that that is a possibility. And that stringent London-specific measures risked sending the wrong message to the rest of the country.*"

20 March 2020: Covid-19 Strategy Ministerial Group meeting [INQ000056265]

- Page 4: "*Patients were being moved from busy hospitals into hospitals which were less busy to spread the burden or cases. This was being misreported in the press as hospitals being overloaded, and should be corrected.*"

20 March 2020: COBR meeting [INQ000056212]

- Page 4, para 1: "...*The CMO said that given the scale of the outbreak, infections were likely to double every four to five days and that the timescale for ascertaining evidence of the effectiveness of intervention measures was approximately two to three weeks. This two to three week timescale was also the timescale expected for effects from the current outbreak to be significantly felt in Intensive Care Units (ICUs). This applied across the UK.*"

- Page 4, para 2: "*The CHAIR turned to the Cabinet Secretariat to introduce the paper setting out the recommendations for further social distancing measures. The DIRECTOR GENERAL AT THE CABINET SECRETARIAT said that the objectives of the measures in the paper were to*

reduce the demand on ICUs and that they were created within the context of the previously announced measures and that the measures were aimed to address the gap between the current situation and the required 75 per cent reduction in non-essential social mixing."

- Page 5, para 5: "*On ICU mutual aid, this happened normally and so far ICUs were not collectively facing unexpected pressures, though this was expected to change in the near future, as ICUs were put under greater strain.*"

20 March 2020: C-19 Health Ministerial Implementation Group meeting [INQ000055934]

- Page 6: "*In discussion the following points were made: - The NHS would work with the private sector to increase capacity by 8,000 beds. - Alternative accommodation, such as university halls could be used to provide extra care capacity. - There would be a high need for respiratory support skills and options to increase capacity could include providing specific training to health trainees and deploying combat medical technicians into domestic service; - Work was progressing with organisations in the voluntary sector to deploy volunteers; - The Embassy in Beijing has identified suppliers of PPE to help with stock shortages; - The Group should discuss the role of volunteers and private healthcare at future meetings.*"

21 March 2020: Covid-19 Strategy Ministerial Group meeting [INQ000056263]

- Pages 2-3: "*The CHIEF MEDICAL OFFICER said that there had been 872 new cases identified the previous day. The critical question was how many cases were in the Intensive Treatment Unit (ITU); this number was 335, of which 193 cases were in London. This was up from 143 the day before. Under normal circumstances there were 700 ITU beds in London, which could be expanded. London was not yet at that pressure point. Prohibitions on social activity had been discussed at length by the Committee the previous day. There was some risk of ITUs being overtopped if the Government did not do more, but there were also risks associated with further action. The ITU data being presented alone was not a reason for the Government to decide that day to change decisions made the previous day.*"
- "The GOVERNMENT CHIEF SCIENTIFIC ADVISOR said that the view from the modelling group was that the doubling rate was slightly under five days. In the discussion the following points were made:
    - The data in the pack was not correct, and this was not the rate at which deaths and ITU cases were doubling. The numbers needed to be right so that the Government could get a grip on the situation. The figure of 780 ITU beds in London was given a few weeks ago;

the Committee needed to know whether capacity had been increased since then and if not, why not;
  - If cases continued to increase there would be 1200 in five to six days, then 2600, then 5000 two to three days later;
  - There was nothing that could be done about the number of cases already in the system. This was 177,000 cases without accounting for any further cases;
  - There may be drugs available to stop people getting pneumonia and dying, and other interventions to reduce stress on ICUs overall."

- "Responding, the CHIEF EXECUTIVE OF THE NHS said that the NHS was aiming for 500 new beds in the coming week to ten days, and 400 new beds per week after that. The private sector would also provide more beds from the following week. To increase capacity, the first thing to do was empty critical care beds. There had been a conference call of all ITU specialists the previous evening, and they estimated that they would be able to free up between a third to a half of all critical care beds as the situation worsened. The current critical care occupancy was 79 percent and emptying out. Northwick Park hospital had been filling up the previous night and had spread the load across London. The NHS was aiming for 2,800 ventilated beds and 300 in the independent sector in London, using both critical care capacity and ventilator capacity in operating rooms. He said that they were looking at staffing as part of their twelve week plan."
- Responding, the GOVERNMENT CHIEF SCIENTIFIC ADVISOR said that the data had been worked out in terms of doubling times. The supply of beds would become critical at about 3.5 doubling times on current projections. The North East and Yorkshire were at seven doubling times, which showed the importance of work to increase the doubling time. The worst case scenario was that ITU capacity in London would be overwhelmed in nine days' time, but the projection was that this would happen in 15 days' time. The data only took account of some of the measures to increase capacity. The measures being taken should push this from between five and seven days to 21 days, and if it was 21 days then the NHS would cap out below the surge capacity. This was the aim. Responding, the HEALTH SECRETARY said that the data on ITU capacity should form part of the 'battle plan' update to this meeting the following week and a plan on bed capacity would be presented at this meeting the following day. The 'battle plan' would include testing and the launch of an app, which the top coders in the world were working on and would be ready in a couple of weeks.

21 March 2020: Report from the CMO titled 'Coronavirus: summary of strategic and tactical approach to the epidemic' [INQ000203890]

22 March 2020: C-19 Health Ministerial Implementation Group meeting [INQ000055942]

- Page 3: "*- to support NHS capacity, elective operations will stop on the 15th April, with individual Trusts tapering to that date at the rate they see fit. Community healthcare providers now have the responsibility for the discharge of medically fit patients, moving the system to a 'pull' model. Individual acute Trusts should also be expanding their ICU capacity. Work across the Ministry of Defence & NHS has created a plan for an additional 2,000 beds housed at the ExCel London centre, which will be needed to support London ICU bed capacity within a week at the current rate of demand. ICU supply and demand data will be broken down by region by the end of the next week (commencing Monday 23 March); - to support capacity in community care advice to care homes should be updated - current guidance suggests they should accept patients who are asymptomatic even if they have not received a COVID test. The CMO should opine on this to reassure care homes, but a potential option should care homes refuse to accept could be step-down care in hotels. Non-NHS bed procurement should be tracked as part of overall capacity (e.g. hotel beds). Further work is required on Social Care metrics to allow a better understanding of system resilience and capacity available (in beds and care packages) to support discharges;*"

22 March 2020: Covid-19 Strategy Ministerial Group meeting [INQ000056266]

- Page 4: "*The current number of deaths implied the best estimate from the data was 230,000 patients (using basic 5% figure), with 11,000 in hospital and 3500 of which needed ICU beds. This implied the NHS would not be able to cope as we are now.*"

- Page 5: "*THE CHIEF EXECUTIVE OFFICER OF THE NHS responded that over the last couple of weeks there had been a major drive to free up capacity in hospitals. Thas had freed up to approx 20,000 acute hospital beds, he noted occupancy was now at the lowest in more than 3 decades. In terms of critical care he noted we were discussing further and the London team would be discussing the London critical care plan tomorrow.*"

23 March 2020: Covid-19 Strategy Ministerial Group meeting [INQ000056264]

- Page 4: "*The CHIEF EXECUTIVE OFFICER OF THE NHS said that care ratios in intensive care would usually be 1:1, but that in London they were being stretched to 1:8. In the short term the NHS would be able to shift staff from all of their specialist work and theatres onto overnight recovery and long term ventilation facilities. A longer term plan would be needed.*
- *Continuing, the CHIEF EXECUTIVE OFFICER OF THE NHS said that clear planning was in place to ramp up the number of ventilators. Staffing would be managed less by bringing new people into the NHS, and more by moving existing personnel onto new tasks with some refresher training. Surgeons would need to be trained as many do not use ventilators. Anaesthetists, who*