# Understanding the policy dynamics of COVID-19 in the UK: early findings from interviews with policy makers and health care professionals


## Abstract

The UK government response to COVID-19 has been heavily criticised. We report witnesses' perceptions of what has shaped UK policies and how these policies have been received by healthcare workers. Such studies are usually affected by hindsight. Here we deploy a novel prospective approach to capture real-time information.

We are historians, social scientists and biomedical researchers who study how societies cope with infectious disease. In February 2020 we began regular semi-structured calls with prominent members of policy communities, and health care professionals, to elicit their roles in, and reactions to, the pandemic response.

We report witnesses' perceptions that personal protective equipment (PPE) stocks were too small, early warnings have not led to sufficiently rapid policy decisions, and a lack of transparency is sapping public trust. Significant successes include research mobilisation. The early experiences and reactions of our witnesses suggest important issues for investigation, notably a perception of delay in decision making.



Keywords:

COVID-19; United Kingdom; Health policy; scientific advice; epidemic; pandemic; National Health Service; Department of Health and Social Care.

[1] Introduction

During public health emergencies policymakers are under unparalleled pressures, including from the media, public, healthcare workers, and politicians. We consider the dynamics of the UK policy response to the current COVID-19 pandemic, through the lens of 'policy sciences' literature, including its analysis of disaster response. This lens offers a valuable corrective to a positivist, linear view of the links between scientific knowledge and policy.

Berridge reviews this linear view and its more realistic alternatives, drawing on the sociology of scientific knowledge and science policy studies.[1,2] Berridge's paper on the UK response to the 2009 influenza pandemic highlights the utility of using contemporary oral history in shaping effective health policy.[3] The work of Jasanoff and others in establishing the discipline of science and technology studies (STS) calls attention to 'the untidy, uneven processes through which the production of science and technology becomes entangled with social norms and hierarchies.'[4] Black and Donald's account of the pitfalls of 'evidence-based policy' is an accessible summary of much other work.[5]

Policy science work on how policymakers use evidence also helps interpret policy responses to coronavirus. A recent body of work by Paul Cairney and others discusses how they select which evidence they have time to use, sometimes starting from emotions, belief and habits rather than rational processes. Cairney and Oliver note the attractiveness, for Ministers, of framing strategies based on appeal to the emotions and the familiar, in contrast to the exercise of rationality. As we discuss, this is a good lens for understanding ambitious coronavirus testing targets set without reference to how the results would be used. Cairney and others also note

how policymakers can only pay attention to a tiny proportion of their potential responsibilities.[6,7,8]

Chris Whitty, the Chief Medical Officer for the UK government, has made a strong case for including more social science expertise in policymaking, since '[m]any policy decisions do not turn out the way they were intended because people do not behave in the way policymakers … thought they would.'[9] Weible et al, in an important contribution which was the first policy sciences paper on COVID-19, review how policy sciences can illuminate the interplay between scientific and technical expertise and policy choices in the COVID-19 crisis.[10] Their discussion of the interaction of policy with science, and of ways to assess policy success and failure, shaped our analysis of our transcribed calls with witnesses. Another valuable lens was Black and Donald's account of research as one of several contestable knowledge sources (which include public opinion, political insight, and managerial understanding). None of these, unaided, can dictate what policy should be.

## [2] Materials and Methods

On 28 February 2020 we began interviewing two panels of witnesses, from UK policy communities and front-line health care professionals, for the purpose of capturing events and their immediate reactions to them. Interviews were semi-structured, beginning from a general question about what coronavirus-related work the witness had recently done: interviewers did not suggest particular themes. Ethics approval was secured from Research Ethics Committees of our two Universities. Recruitment was pragmatic, via personal contact, and, for the health care professionals, benefited from a 'snowball' approach. Our witnesses from policy communities were selected

for their closeness to UK central government decision making. We did not attempt to interview politicians or their political advisers ('Special Advisers') at this stage, but the witnesses we did choose were sufficient to understand the pattern of developing events.

Witnesses spoke on condition of anonymity, enabling them to speak more frankly. We do not disclose the organisations where they work, which include key sources of UK scientific advice on the outbreak. The anonymity of the witnesses is problematic, as it does not allow the reader to see the overall pattern of each witness' contributions. We had no alternative: our complete anonymity approach was the only one under which the policy witnesses would permit their evidence to be used. They felt they were a very small group, from which individuals could too easily be identified. The same constraint did not apply to the health care workers, drawn from a more numerous group. Here we can describe someone, for example, as 'a clinical director'.

In the initial phase of our data collection it would be unethical and impractical to distract witnesses from their outbreak response duties for full-length interviews. Semi-structured telephone and online calls, typically of 15 minutes, are recorded and transcribed, contacting each witness weekly or fortnightly. Analysis at this stage focusses on any rapid learning which emerges. This prospective approach is novel, though some of the early oral history work on AIDS policy had a similar style and has been called 'history in the making'.[11] The project continues until August 2021: during its second phase we will conduct longer interviews and more formal data analyses, seeking broader findings valuable for longer term policy making, for example improving government readiness for future epidemics.

The funders have played no role in study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the paper for publication.

The themes we discuss below are selected for their salience in the interviews. As mentioned, we did not guide witnesses to particular topics. The transcripts were not coded: instead we searched them for emergent themes. We now consider in turn the themes of early warning systems, clarity of communication, contingency planning, research readiness, delays, scientific advice, central-local tensions and visibility.

[Text box about here: 'Early warning of emerging diseases

The International Health Regulations require WHO Member States to detect and report specific diseases. Resulting intelligence is shared. A range of different international networks have been set up to meet specific needs, for example the US CDC's Morbidity and Mortality Weekly Report.[12,13]

The Emerging Infections and Zoonoses section of Public Health England (PHE) is responsible for early warning. It conducts horizon scanning of nearly a hundred sources for rumours of diseases and incidents around the world. Sources include the WHO and Ministries of Health, media, and social media, which are used because first news about infectious disease events now often comes from unofficial sources.[14]]

.

[3] Early warning systems

Global – particularly WHO-based – early warning systems served their purpose well according to our witnesses. These systems triggered UK responses at the beginning of January 2020. As the concern of specialists at Public Health England (PHE) mounted, the issue was escalated on 13 January  to the government's New and Emerging Viral Threats Advisory Group (NERVTAG and on 22 January to a meeting of the Scientific Advisory Group for Emergencies (SAGE) chaired by the government's Chief Scientific Adviser Patrick Vallance, and to the Cabinet Office Briefing Room (COBR) chaired by the Secretary of State for Health and Social Care, Matt Hancock.[15]

We asked our witnesses how well this machinery worked in early 2020. One said the processes had been:

> 'extremely confused to begin with … people were being on-boarded into [Whitehall (central government) teams] at a rate of knots, so there was a certain amount of confusion: messages were being misunderstood, passed to the wrong people and so on. … now [26 March], … the civil service is actually performing, but it took a few weeks.'[16]

Concern mounted. We heard that:

> 'By mid-February we had quite a good idea what an unmitigated epidemic would look like in the UK. … the same … orders of magnitude of the worst … influenza pandemic.'

Unfortunately, at that point our witness was aware of ‘a kind of distancing …, why it won’t happen here,’ adding that this

> ‘kind of initial denial’ [is a universal human reaction in epidemics.] ‘We have gone through a minor, faster version of the US … so the 3rd March … [Prime Minister Boris] Johnson was shaking people’s hands deliberately [to downplay anxiety about infection] … and then very quickly, … twenty days later, declaring the country goes into lockdown.’[17]

[4] Clarity of communication

The analogy of epidemic as war, often heard at the time, was in the minds of these witnesses, who had an impression of its onset triggering frantic preparation. That was reflected in the deluge of rapidly changing operational instructions and advice which the centre issued. These changes often stemmed from scientific uncertainty about the consequences of different policy choices: personal protective equipment (PPE), as we shall see, was a good example. Our interviews with healthcare workers show how this uncertainty reduced their trust. Clinical leads in particular discussed how trust in national guidelines was degraded as these were changed so regularly, and highlighted perceived inconsistency. A Clinical Lead in an Emergency Department described this uncertainty:

> ‘I think it’s been very striking that [the Emergency Department] is … an interface between [different services which have] all had different advice about PPE. … if we’d have had clear, uniform guidance and equipment for PPE it would have been a lot less stressful from the outset because we have

> changed it so many times. … just that clarity of communication from the outset – even clarity of communication in terms of "it's not ideal, this is what we're going to do now, but as soon as we have got this, we will do the next thing." The uncertainty of PPE is a nightmare.'[18]

Communication, to health and social care staff and the public, has to be timely, accurate, and reconcile the pressure for simple messages with the need to justify changes of direction. However, a GP partner in the Liverpool area described the stream of information they receive daily and the lack of nuance of these messages, which they felt were not sufficiently or appropriately targeted to healthcare professionals.

> 'We get 3 emails a day. One from the LMC [Local Medical Committees], one from the CCG [Clinical Commissioning Group], and one from Public Health England. And possibly a fourth one from the BMA [British Medical Association] as well. And a lot of it is just the same stuff re-cooked. … And … it hasn't really changed what we have done … Four emails a day to read is just bonkers really. Especially when you're still trying to do your full-time job. … That kind of sensationalisation, we don't need that sent to us by government.'[19]

Some communication to the public has been exemplary in its clarity. Health care professionals in our study, however, have often been left confused and frustrated by the particularly poor communication of changes in PPE policies, which appears to be related to the unclear allocation of responsibilities between NHSE and PHE discussed below.[20] One health care worker, commenting on the way PPE guidance changed, told us that it would have been better to tell the NHS that guidelines are

"for now", based on availability of supplies, and would change.[21] Over the first six months of response, there was too little attention to the impact of PPE decisions – and non-decisions – on the morale and trust felt by front line clinical staff.

## Contingency planning

PHE and NHS England (NHSE) maintain plans, which have been honed in the light of the 2003 SARS and 2009 pandemic flu epidemics.[22] (NHSE is the government agency which leads the national, publicly-funded, health service in England.) However a person close to the process spoke to us of their concern that such experience could have been used better, and about the impact of resource constraints:

> [lessons] '"learnt" implies you have done something with the knowledge, which isn't necessarily the case … bear in mind that … NHS England and PHE … are much worse off in terms of staffing and funding compared to … 2009 … and … [the] Department of Health [and Social Care (DHSC)] as well. We are doing more with less, and it shows.'[23]

One element of DHSC 'doing more with less' has been the progressive stripping away of in-house medical advice to the Chief Medical Officer (CMO), and a one-fifth reduction in its overall staffing since 2010.[24,25,26]

Contingency plans dealt, among other things, with the governance of an epidemic response, including the co-ordination of different agencies. Faced with an unparalleled challenge in 2020, there was considerable improvisation over governance, as we discuss in the section on central-local tensions.

Contingency plans were based on epidemic influenza. Since COVID-19 is more infectious, this made difficulties. All has not been well with contingency planning: in 2007 a planning exercise codenamed ‘Winter Willow’ highlighted several problems with influenza preparations, a message borne out by the 2009 swine flu outbreak (Berridge 2019).[27] Exercise Cygnus in 2016 tested pandemic influenza preparedness: the report on the exercise is not being released, but a leaked copy stated that the UK’s preparedness was not sufficient. DHSC states that necessary lessons have been learned: others, for example Martin Green of the largest independent care home providers body, disagree.[28] This is relevant to the stockpiling of personal protective equipment (PPE).

In place of the usual aprons recommended for influenza PPE, clinical infectious disease experts recommended that gowns were required for managing COVID-19 patients.[29] FFP3 masks, suitable for both influenza and COVID-19, have been in very short supply. Chris Hopson, Chief Executive of NHS Providers (the membership organisation for NHS bodies such as hospitals), publicly asked whether ‘the pandemic stock [was] configured correctly?’, and in Parliament on 28 April Michael Gove, the Cabinet Office Minister, conceded that the stockpile was ‘explicitly for a flu pandemic.’[30,31] Since our interviews were conducted, reports by the National Audit Office and then the House of Commons Public Accounts Committee have reached similar conclusions about PPE and early responses to the epidemic.[32,33,34] Investment in equipment stockpiles did not meet reasonably foreseeable size or configuration requirements: there was too little PPE and too much of it was of the wrong kinds for this disease.

## Research readiness

Research is often neglected as an element of epidemic response, but is especially important when responding to a novel pathogen. Through our interviews we heard about the valuable UK science contribution to global readiness initiatives in novel viral pathogen research, which allowed the global scientific community to sequence the virus and gather patient data to pre-established protocols with unprecedented speed, accelerating the introduction of accurate diagnostics and the development of vaccines and treatments.[35] We conclude that the UK was particularly well prepared, in global terms, to respond rapidly with, for example, clinical trials.

## Delays

Research indicates the sheer difficulty of crisis decision-making, stressing problems collecting and comprehending the necessary information, ambiguity, complexity, pace and organizational barriers to agile decision-making, including shared responsibilities between multiple organisations.[36] In England, decisions – and, critically, implementation – were slow to follow the initial alert. We were told that 'six weeks of opportunity was wasted,' and that:

> 'from 20th January, it was clear there was human transmission … that this was going to spread around the world. And that was a six week window [for] ramping up PPE, making sure there was supplies, beds, making sure we were prepared for what was likely.'[37]

It is normal for health professionals and advisers to complain of delay when there is an urgent policy issue to be resolved. What is different about an epidemic is the need to react fast enough to start slowing its exponential growth, or as one witness put it:

> ‘there is no point saying we are doing things quickly ... I have heard many times that ... [something] is going on at unprecedented speed. But ... until that speed is faster than the pace of the epidemic, you won’t be able to mitigate ... or indeed bring the epidemic to an end.[38]

> ‘Inevitably as things get passed down from Committees, and this is in the Ministers, SAGE, the lag phase between … advice [from] SAGE … or a decision made by whoever, Minister or anybody else, there is a lag … until it gets through the system. And when you are in an epidemic which is very fast moving … it is no good to say we are going quicker than we usually go’.[39]

Persuading government Ministers to make the challenging decisions needed has often been difficult, though some decisions were said to be rapid. The majority of our policy witnesses frequently expressed frustration about delayed decisions. Our health care professional witnesses noticed such lags in many places, notably in the redeployment and retraining of staff. We heard from the policy community of ‘a couple of heated moments [in mid-March] where people were saying “you are not moving fast enough”’. The government’s most senior advisers, we were told, responded that policy decisions were a process, that the politicians needed to be led through it.[40]

Scientific advice

Our evidence allows us to refine Weible et al's observation that the COVID-19 outbreak challenges scientific and technical advisers to simplify and communicate, and challenges policy makers to balance political judgement with the responsible use of expert advice.[41] Kogan et al studied the interaction between researchers and policy makers in DHSC's predecessor, the DHSS, concluding that it was productive when participants could translate policy problems into research questions and research findings into actionable briefings.[42,43] A scientific adviser, unprompted, recognised playing this 'boundary-spanning' role, but also described what happened when the two epistemic systems did not meet: policy makers would 'say, "what should we do?" And [scientists] say "well what do you want to achieve?" And we just go round and round in circles'.[44]

This departs from the UK model of scientific advice, summarised by a scientific adviser as 'advisers advise, and Ministers decide [or] … the Chief Medical Officer would become the de facto prime minister'.[45] Politicians use scientific and technical experts as part of the rationale for policy decisions, but the attractions of this tactic have never been greater than during this epidemic.[46] Scientific expertise is a comfort as well an intellectually valuable input to decisions: it can also comfort the public, as when scientific advisors such as Whitty and Vallance flank a senior Minister in press briefings. But the 'what should we do' question made witnesses concerned that Ministers were shifting the accountability for hard decisions onto them.[47] This was emphasised by a public rhetoric of 'following the science', for example to justify the lockdown decision at the end of March: this rhetoric lasted until late April.

Ministers have met challenges such as testing, and the supply of ventilators, with promises that appear unsupported by evidence to demonstrate that delivery was feasible or explanation of how the test results would be used. This is an example of policymakers taking the 'shortcuts' that Cairney described, where decisions are based on emotions, beliefs and habits: not, in these cases, following the science.[48]

Disasters pose co-ordination problems, and these affected how scientific advice was sought and used. Berridge describes the impact of such problems between the Department of Health (DH), the NHS and PHE's predecessor, the Health Protection Agency, on the UK management of the 2009 swine flu pandemic.[49] Several witnesses saw similar problems in 2020, despite the opportunity to learn from 2009. We heard how demarcations of responsibility between the NHS and PHE could be problematic. There were also interfaces to be managed with the health protection work of local authorities, with private contractors (discussed in the next section) and with the social care system. In the words of one witness:

> 'one of the great problems ... is ... the fragmentation of the health system ... the Chief Scientist, UKRI, NHS, NIHR, Department of Health and Social Care, Public Health England, that ... may work well in peace times, but when you are in a crisis, they have got to be coordinated they ... frankly they have got to be led. And there has to be clarity of that leadership. ... all of those leaders are peers... a recipe for compromise ... lowest common denominator, and ... slow decision making.'[50]

(UKRI is UK Research and Innovation, the government science funding body, whilst NIHR is the National Institute for Health Research, the government funder for the NHS' specific research needs.)

Sometimes, policy makers directed scientific attention where biomedical science had little to say, as when NERVTAG was obliged, in April, to debate the largely unclear evidence for use of masks by the general public.[51] This case illustrated the way in which NERVTAG was scrupulous about confining itself to what it felt biomedical science had to say. The result was a very guarded public statement about the efficacy of wearing masks. The case was an example where the 'advisers advise, Ministers decide' model worked as intended: Ministers were interested in masks, took advice, and then made decisions in favour of their use which were based on wider considerations. This showed that the early rhetoric of 'following the science' was no longer dominating government thinking by late April.

## Central-local tensions

Once the top-level decision is made, the speed and quality of implementation is critical in disaster response. There is no obvious demarcation between decisions about policy and implementation. In the last ten years, government Ministers have aimed to devolve decision-making from DHSC (and its predecessor, DH), setting the direction but leaving some important decisions to NHSE.[52] This approach was never going to apply in a major crisis such as COVID-19, where political pressure on the government for solutions was, inevitably, intense. The existing 'peacetime' model, which devolved responsibility, and effective public accountability, for many NHS matters to NHSE and the NHS itself, was transformed by the pandemic.

This was replaced by a 'wartime' model in which control was centralised in government, with an apparatus of daily Ministerial and official meetings. This changed the accountability relationship with the Press, obliging government to

become far more involved in justifying and explaining each decision. Daily face-to-face press briefings at the Prime Minister's office became a feature.

Central/local tensions emerged over modelling, the Ventilator Initiative, specially established COVID-19 'Nightingale Hospitals' and 'Lighthouse' testing centres, and contact tracing. In several of these, new organisations (and in some cases physical assets) have been set up by the centre. When taking over control in this way, the centre has opted to use external service providers such as the accounting firm Deloitte and the service contractor Serco.

The cumulative impression left by the cases discussed here is that the government has reached for centralised private solutions without sufficient insight into the operational requirements (for instance in contract tracing), and has let corporate service providers convince it too easily that their generic capacities can smoothly be plugged into COVID-19 responses, which in fact need the detailed expert knowledge possessed only by existing professionals and the public sector bodies at local level who employ them. The UK's COVID-19 experience has been that contracting-out can only be effective when adequate time is available: not in the very short timescales the virus allows us.

There have been powerful advocates for an alternative strategy which would delegate authority to local resources and teams, harnessing (to quote Sir Paul Nurse, Director of the Crick Institute, on testing laboratories) the nation's 'Dunkirk spirit'.[53] Chris Ham has been among those advocating a stronger local role in the Test and Trace initiative, arguing that this would both use scarce contact tracing resources better and engage more effectively with communities.[54]

Public health practitioners have felt the same, criticising centralisation and arguing for the greater efficacy of local testing and tracing.[55] Professionals at local level expressed scepticism to us about the planning of Test and Trace activities. A Merseyside GP & Clinical Director was concerned that tests were done and not followed up: 'there's no point doing a test if you're not going to contact trace and manage that test.' They added: 'There seems to be a complete lack of coordination between central government and the community teams.' [56]

A Director of Public Health told us:

> 'National government has operated on the basis that they are best placed to understand the needs of local communities, more than local government does, and has the necessary skills and expertise to respond accordingly, seemingly forgetting all about directors of public health in local authorities and their teams, who have spent years training and working on this exact agenda.' [57]

This witness spoke of a failure to share modelling data from national to local level, to understand the potential impact of the pandemic; failure to share patient identifiable data; lack of understanding of local public health systems and how they can/could be geared up to respond; lack of understanding of the Director of Public Health role locally; and an inability to see the value in engaging local experts at an early stage. Mixed messages had led to local distrust of national messages, emphasising the need for strong local communications with the public.

The Government's instinct to bring control to the centre in a crisis, combined with the decision to contract out new central activities, is what underlies the problems with the local delivery of Test and Trace, such as the availability of data to local teams and

the ability to use local expertise. It goes a long way to explain the otherwise surprising disenfranchisement of local Directors of Public Health, normally key figures in outbreak management. (Our paper is based on interviews conducted before the introduction of local outbreak management.)

## Visibility

Effective strategic leadership demonstrates visibility, accountability and transparency. People want to be led by people, not anonymous regimes or automata. A conscious presentational decision to surround the Ministerial speaker at press briefings with scientific advisers plays effectively to the public reassurance factor mentioned earlier, and the Chief Medical Officer, Chris Whitty, has been praised for an authoritative yet empathetic style.

However, the lack of transparency about the membership list, and minutes, of SAGE (reversed on 4 May) diminished public trust, even leading a former government Chief Scientific Adviser (Sir David King) to set up an 'independent SAGE'.[58] And on the option of letting the population acquire immunity through natural infection, which emerged in an unclear way in early March, the difficulty of putting it clearly seems to have led to a lack of transparency:

> 'I'm not sure Patrick Vallance would say it again. It's a difficult concept. We're trying to be open and honest, but there are some things that you can probably only say to people in the know with scientific knowledge behind closed doors, because they get it.'[59]

If such an ethically fraught policy needed to be considered, that needed to be done in public and not in private – a good reason for the UK authorities' decision against relying on the population acquiring immunity.

## Conclusions

These early findings are presented now because of the value of rapid feedback. There are inevitable methodological limitations to meeting this objective. There are availability biases in the witnesses: whilst all witnesses' time is at a premium during this phase of the outbreak, this may have been felt most acutely in key organisations such as DHSC, NHSE and PHE. Policy dynamics vary between the four countries of the UK: while we do include health care professionals in Scotland and Wales, to date we have only included key informants from policy communities in England.

We now draw out some conclusions about the interaction of policy with scientific and technical experts and information, and then conclude with the issue of policy success or failure. In relation to science and policy, we note the essential role of boundary-spanning individuals who can translate policy problems into research questions, and research results into advice. This is particularly necessary where governance is complex and fragmented, as in central government and the NHS, if knowledge which can be used is to reach decision-makers who could use it. Without the efforts of these boundary-spanning individuals, we heard how dialogue can 'go round in circles.' UK government has been eager to use science to legitimise its choices – to the concern of several scientific advisers who told us policy makers were trying to pass responsibility for decisions to them. Whatever the reluctance of politicians to

make unpopular choices, there are now signs in the UK that scientists are emphasising the doctrine that ‘advisers advise and Ministers decide’.

Turning finally to the assessment of success and failure, as Brändström and Kuipers observe, policy decisions (and non-decisions) are heavily scrutinized and politicized through framing strategies and blame-games.[60] Our witnesses mostly felt that blame games had started by March, while framing contests, such as ‘invisible foreign enemy’ versus ‘inevitable result of austerity/cuts in preparedness investment’ are definitely evident.[61] Blame games about coronavirus response take place in a setting of media speculation about the newly-elected government’s dissatisfaction with the general performance of the civil service, and about how to interpret the departure of its head, Mark Sedwill.[62] The uncertain outcomes of blame games and framing contests serve as a reminder of the emergent and contingent element in the policy dynamics of coronavirus.

Richard Horton wrote in a Lancet  editorial on 28 March: ‘The NHS has been wholly unprepared for this pandemic. It’s impossible to understand why. … It is, indeed, as one health worker wrote … “a national scandal”.’[63] How far does our evidence support this? Weible et al identify three fields of success (or failure).[64] First, successful *decisions* 'contain threats, minimize damage, and restore order and stability’. UK planning anticipated that the initial ‘containment’ strategy would be overwhelmed by a sufficiently infectious pathogen: up to that point it appears to have done its job relatively well, though questions remain.[65] The succeeding ‘delay’ and ‘mitigation’ phases have had much more mixed results: much better than nothing, but so far not nearly as effective as policies adopted, for example, in Germany and South Korea, as evidenced by the UK’s ‘R’ trend.

Second, Weible et al consider that successful *processes* 'resolve the crisis at hand [whether] activating plans [or] well-judged improvisation, follow a process that is legitimate, follow constitutional conventions, [and] garner legitimacy.' For COVID-19, we have been struck by the progressively deteriorating assessment of the UK's response given by our witnesses from early March to late April. Policy processes have shown some strengths but many weaknesses.

Finally, *political* success means 'reputational protection, enhancement, and popular support; ability to manage policy and political agendas with as little backfire as possible; and capacity to maintain long-term governance/ideological visions.' This is unfinished business, the subject of framing contests yet to be resolved in the political arena.

Reference List


1 Berridge V (ed.) *Making Health Policy: Networks in Research and Policy after 1945* (Amsterdam and New York: Rodopi, 2005).

2 Berridge V, Taylor, S. The problems of commissioned oral history: the swine flu 'crisis' of 2009. *Oral History* 2019; **47(2)**: 86–94.

3 Ibid.

4 Jasanoff S (ed.) *States of Knowledge: the Co-Production of Science and the Social Order* (London: Routledge, 2004).

5 Black N, Donald A. Evidence based policy: proceed with care. Commentary: research must be taken seriously. *BMJ* 2001; **323**(7307): 275.

6 Cairney P. *The politics of evidence-based policy making*. (Basingstoke: Palgrave Macmillan, 2016)

7 Cairney P. and Oliver K. Evidence-based policymaking is not like evidence-based medicine, so how far should you go to bridge the divide between evidence and policy? *Health Research Policy and Systems* 2017; **15**:35

8 Cairney P. and St Denny E. *Why Isn't Government Policy More Preventive?* (Oxford: OUP, 2020)

9 Whitty C J M. What makes an academic paper useful for health policy? *BMC Medicine* 2015; **13**: 301 DOI 10.1186/s12916-015-0544-8.

10 Weible C M, Nohrstedt D, Cairney P, et al. COVID-19 and the policy sciences: initial reactions and perspectives. *Policy Sciences* 2020; https://doi.org/10.1007/s11077-020-09381-4.

11 Berridge V. Researching contemporary history: AIDS. *History Workshop Journal* 1994; **38**(2): 227-234

12 healthknowledge.org.uk (2020) https://www.healthknowledge.org.uk/public-health-textbook/disease-causation-diagnostic/2g-communicable-disease/cdcontrol (Accessed 19 May 2020).

13 Yang W, Lan Y, Sun Q, Wang J, Li Z. Early Warning for Infectious Disease Outbreak (2017) https://www.sciencedirect.com/science/article/pii/B9780128123430000011#s0045 (Accessed 19 May 2020).

14 Public Health England. Public Health Matters https://publichealthmatters.blog.gov.uk/2018/02/21/disease-detectives-keeping-track-of-new-and-emerging-infectious-diseases/ (Accessed 19 May 2020).

15 Reuters. Special Report: Johnson listened to his scientists about coronavirus - but they were slow to sound the alarm (7 April 2020) https://uk.reuters.com/article/uk-health-coronavirus-britain-path-speci/special-report-johnson-listened-to-his-scientists-about-coronavirus-but-they-were-slow-to-sound-the-alarm-idUKKBN21P1X8 (Accessed 19 May 2020).

16 Unattributable interview, 26 March.
17 Unattributable interview, 8 April.
18 Unattributable interview 23 April.
19 Unattributable interview, 1 May.
20 Unattributable interviews, 6 April, 1 May.
21 Unattributable interview, 23 April.
22 Unattributable interview, 4 March.
23 Unattributable interview, 6 April.
24 Sheard S. Quacks and Clerks: Historical and Contemporary Perspectives on the Structure and Function of the British Medical Civil Service. *Social Policy and Administration* 2010; **44(2)**: 193–207.
25 Office for National Statistics. Public Sector Employment (2020) https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/publicsectorpersonnel/datasets/publicsectoremploymentreferencetable (Accessed 19 May 2020)
26 Office for National Statistics. Public Sector Employment (2011) https://webarchive.nationalarchives.gov.uk/20160105202313/http://www.ons.gov.uk/ons/taxonomy/search/index.html?newquery=*&nscl=Home+Civil+Service+Personnel&nscl-orig=Home+Civil+Service+Personnel&content-type=publicationContentTypes&sortDirection=DESCENDING&sortBy=pubdate (Accessed 19 May 2020)
27 Berridge V, Taylor, S. The problems of commissioned oral history: the swine flu 'crisis' of 2009. *Oral History* 2019; **47(2)**: 86–94.
28 *Guardian*. Cygnus: Revealed: the secret report that gave ministers warning of care home coronavirus crisis. (7 May 2020) https://www.theguardian.com/world/2020/may/07/revealed-the-secret-report-that-gave-ministers-warning-of-care-home-coronavirus-crisis. (Accessed 19 May 2020).
29 Unattributable interview, 6 April.
30 BBC Radio 4 'Today' programme (20 April 2020).
31 House of Commons Hansard 28 April 2020, col. 220.
32 National Audit Office. Overview of the government's response to the COVID-19 pandemic. (London: National Audit Office, 2020)
33 National Audit Office. Readying the NHS and adult social care in England for COVID-19. (London: National Audit Office, 2020)
34 Public Accounts Committee. Readying the NHS and social care for the COVID-19 peak (London: House of Commons, 2020)
35 Unattributable interview, 28 February.
36 Boin A. The New World of Crises and Crisis Management: Implications for Policymaking and Research. *Review of Policy Research* 2009; **26(4)**: 367–77.
37 Unattributable interview, 17 April.
38 Unattributable interview, 3 April.
39 Unattributable interview, 17 April.

40 Unattributable interview, 8 April.
41 Weible C M, Nohrstedt D, Cairney P, et al. COVID-19 and the policy sciences: initial reactions and perspectives. *Policy Sciences* 2020; https://doi.org/10.1007/s11077-020-09381-4.
42 Kogan M, Henkel M, Hanney, S. *Government and Research: Thirty Years of Evolution*. (Dordrecht: Springer, 2006). http://dx.doi.org/10.1007/1-4020-4446-1.
43 Atkinson P, Sheard S, Walley T. 'All the stars were aligned'? The origins of England's National Institute for Health Research. *Health Research Policy and Systems* 2019; **17(1)**: 95. DOI 10.1186/s12961-019-0491-5.
44 Unattributable interview, 29 April.
45 Unattributable interview, 8 April.
46 Markoff J, Montecinos V. The Ubiquitous Rise of Economists. *Journal of Public Policy* 1993; **13(1)**: 37–68.
47 Unattributable interview 8 April.
48 Cairney P. and Oliver K. Evidence-based policymaking is not like evidence-based medicine, so how far should you go to bridge the divide between evidence and policy? *Health Research Policy and Systems* 2017; **15**:35
49 Berridge V, Taylor, S. The problems of commissioned oral history: the swine flu 'crisis' of 2009. *Oral History* 2019; **47(2)**: 86–94.
50 Unattributable interview, 17 April.
51 Unattributable interview, 24 April.
52 Klein R. *The new politics of the NHS: from creation to reinvention*. 7th edition. (London: Radcliffe, 2013).
53 Professor Sir Paul Nurse, Director of the Francis Crick Institute and formerly of Cancer Research UK. A reference to the volunteer-manned 'small ships' said to have been instrumental in 1940 in evacuating troops from France. BBC Radio 4 'Today' programme (2 April 2020).
54 Ham, C. (2020) The government should give local leaders control over NHS test and trace. BMJ Opinion. 29 June. https://blogs.bmj.com/bmj/2020/06/29/chris-ham-the-government-should-give-local-leaders-control-over-nhs-test-and-trace/
55 Scally G, Jacobson B, Abbasi K. The UK's public health response to covid-19. *BMJ* 2020; **369**: m1932.
56 Unattributable interview, 19 May.
57 Unattributable interview, 17 July.
58 *Daily Mail*. Wellcome Trust chief denies claims SAGE group pressured ministers. (4 May 2020) https://www.dailymail.co.uk/news/article-8284181/Wellcome-Trust-chief-DENIES-claims-SAGE-group-pressured-ministers.html (accessed 21 May 2020).
59 Unattributable interview, 17 March.

60 Brändström A, Kuipers S. From ‘normal incidents’ to political crises: Understanding the selective politicization of policy failures (pt. 1). *Government and Opposition* 2003; **38(3)**: 279–305.
61 Unattributable interviews, 6 April, 8 April.
*62* *Mail on Sunday.* Revealed: Top civil servant in charge of Britain's coronavirus response quits amid growing acrimony between Downing Street and the Whitehall machine. (12 July 2020) https://www.dailymail.co.uk/news/article-8514041/Top-civil-servant-quits-amid-growing-acrimony-Downing-Street-Whitehall-machine.html (Accessed 19 August 2020).
63 Horton R. Offline: COVID-19 and the NHS – “a national scandal”. *Lancet* 2020; **395**(10229):1022.
64 Weible C M, Nohrstedt D, Cairney P, et al. COVID-19 and the policy sciences: initial reactions and perspectives. *Policy Sciences* 2020; https://doi.org/10.1007/s11077-020-09381-4.
65 Unattributable interview, 4 March.