



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



## Editorial

## Where England's pandemic response to COVID-19 went wrong



In the autumn of 2020, it was becoming increasingly evident that the UK was heading for a second COVID-19 wave. The number of COVID-19 cases and COVID-19-related hospitalisations continued to rise, and community transmission and outbreaks became more widespread especially in the north of England.<sup>1</sup>

Control of the epidemic was deteriorating again despite the UK government having thrown billions of pounds at the problem. They had hired private contractors to set up a national test and trace system, as well as a contact tracing app, carried out a national lockdown in the spring, plus local variants of 'lockdown lite' in later months. Yet, these measures failed, and the government was left with few options but to institute a second economically damaging national lockdown on 5 November 2020.

After its successes in handling SARS in 2003, the influenza A/H1N1 pandemic in 2009, as well as threats of Ebola and MERS in recent years, it would seem the UK was well prepared for any pandemic threat. Indeed Public Health England (PHE), the agency whose remit covered communicable disease control in England, was lauded as strong, capable and world leading.<sup>2</sup> However, nine months into the pandemic, the UK had one of the worst rates of infection and case fatality in the developed world. So, what went wrong? The explanation for its underperformance is likely to be multifactorial – a perfect storm of pre-existing flaws in an under-resourced and underprepared system, poor decision-making and politics.

### Weakening of public health

The last decade has seen significant disinvestment in public health in England. PHE saw its operational budget cut by 40% between 2013 and 2019.<sup>3</sup> Other public health departments also sustained cuts. The Andrew Lansley reforms leading to the Health and Social Care Act 2012 transferred public health departments from the National Health Service to the local authorities. Subsequently, these public health departments nationwide have experienced substantial reductions in funding as local authority budgets were squeezed.<sup>4</sup> The resultant under-resourcing of public health services will have translated into cuts in manpower, leading to losses of capacity, expertise, skills and experience, all of which have weakened the national public health infrastructure.<sup>5</sup>

### Failure to invest in systems

One corollary of the disinvestment in public health was that both PHE and the wider health system were inadequately prepared for possible pandemic threats. PHE lacked the information technology infrastructure to deal with large-scale epidemics.

Another issue that emerged during the response was problems with communication and information management. As a result, frontline staff lacked easy and reliable access to the correct and most up-to-date information.

### Failure to prepare

At the system level, pandemic planning focused on the threat of pandemic flu rather than other equally plausible pandemic pathogens. There was a focus on the traditional healthcare settings with planning and preparations for the wider health and care sector rudimentary at best. In addition, in the run up to 2020, any emergency planning carried out was focused not on pandemic threats but on the potential consequences of Brexit.

Pandemic exercises had previously been carried out, such as Exercise Cygnus in 2016. Whilst health stakeholders may have rehearsed these scenarios, little was carried out to implement learning or action on issues identified from these exercises.<sup>6,7</sup> However, this phenomenon is not new, and the UK's failure to learn from past emergencies has been previously reported.<sup>8</sup> Consequently, this heightens the likelihood of the system repeating past failures.

### Failure to learn from other countries

There was a hesitance to learn from the experiences of other countries. In the first wave, Italy and Spain were hit some 2–3 weeks before the UK. Instead of instituting epidemic control measures early, the UK government acted late and suffered a higher death toll.<sup>9</sup> Similarly, when it was becoming apparent that testing capacity and large-scale contact tracing systems would be needed, again there was delay in scaling these up.

In part, this could be due to the adoption of the national strategy for pandemic flu, where the focus initially was to contain the first few hundred cases ('containment phase') and then revert to a mitigation strategy where contact tracing efforts would be scaled down and case management left to the health services. But COVID-19 is not a flu, and the pandemic flu strategy was, therefore, not fit for purpose.

There has also been a slowness in adopting and implementing measures shown to be effective in other countries that have managed to contain the virus, such as South Korea, Vietnam, Taiwan, Japan, Singapore and New Zealand. For example, measures such as more ubiquitous use of face coverings, border controls and digital apps to facilitate contact tracing and backward tracing approaches to identify clusters of infection.

### Fixation with centralised testing and tracing

Initially, the narrative given was that contact tracing was not worth doing as the outbreak phase had moved from containment to mitigation as of 17 March 2020. The reality was that testing and contact tracing could not be performed on a large scale as there was no capacity to do this. After considerable criticism from the public, academics and public health bodies, there was a shift in government policy. Belatedly, more than £12 billion was spent on a centralised testing and tracing system. For context, this staggering sum is more than the combined budget for all of primary care and public health in England. Glaringly, the leadership for this initiative lacked significant public health expertise.<sup>10</sup>

The centralised test and trace system has been beset with issues. It has been criticised for its lack of responsiveness and low rates of contact tracing. Issues with test availability have resulted in people requiring tests being asked to travel hundreds of miles to access one. There have also been issues with the timeliness of reporting of test results. This has led to delays in the initiation of contact tracing efforts, thereby compromising the effectiveness of the whole test and trace initiative.<sup>11,12</sup>

Local systems for testing and tracing are likely to be more efficacious and better adapted to local needs. Moreover, the centralised system is not sustainable in the long term where investment in local laboratory infrastructure and contact tracing capacity is needed. Indeed, the latter are key ingredients for local resilience that would enable local laboratories to scale up testing capacity and for contact tracing operations to be enhanced for local outbreak management.<sup>13</sup> However, at the time of writing, most of the resourcing and approach to testing and tracing remains centralised.

### Narrow hospital-centric perspectives

Much of the preparedness was healthcare-centric and built around hospital response. This can have serious consequences when it ignores the wider ramifications of decisions made in the interests of the hospital sector. For example, to create hospital surge capacity in the early part of the pandemic, there were large-scale discharges from hospitals of infected patients back to care homes, where infection control measures were suboptimal. This was a recipe for disaster and unwittingly seeded infections into these vulnerable settings.<sup>5</sup>

The hospital-centric bias that afflicts the health system response continues and the role of primary care has been overlooked.<sup>14</sup> When the first wave had momentarily died down, most of the health service focus was on recovery when it really should have been planning for the next wave. Hospital CEOs were warned of financial penalties if they did not get their services back up to 90% of pre-COVID-19 levels, rather than planning for the expected rise in demand because of the second wave and winter pressures.<sup>15</sup>

A healthcare-centric approach to COVID-19 also sees the issue from the wrong end of the telescope. COVID-19 is a public health emergency that requires a public health approach and solution. It is a preventable disease, and whilst prevention may not appeal as a high technology solution, there are greater returns on investment in prevention. Trying to solve public health problems with healthcare solutions from a healthcare perspective focuses resources and effort on downstream effects and consequences, such as hospital demand, rather than the upstream causes and drivers. That was a focus early in the pandemic, with concerns about hospital (and

Intensive Care Unit (ICU) capacity to meet demand from COVID-19 infections being a key priority. Whilst this might attenuate deaths, no amount of ICU beds or pop-up Nightingale hospitals will stop a pandemic.

### Fallacy in thinking

In the early months of the pandemic, it could be argued that groupthink was occurring. For example, perfect solution ('nirvana') fallacy was at play around the issue of face coverings. From the outset, there was a 'masks don't work' mindset that led to resistance to advising the public use of face coverings. Similarly, there was the hesitance to acknowledge the potential for airborne spread of the virus. This exemplifies a limitation of a purist approach to evidence-based practice that demands robust evidence from trials, rather than a more nuanced 'evidence-informed' approach to deal with real-world conditions. For a new pandemic threat where the evidence base is limited, a pragmatic approach is needed. Applying lots of measures that are likely to 'help a bit' is better than seeking a perfect solution that 'helps a lot'. Unfortunately, the scientific inclination to wait for the evidence before making a big move introduces too much delay into decision-making when fast decisions are needed.<sup>16</sup>

### Expertise gaps in Scientific Advice for Government in Emergencies and pandemic leadership

For health emergencies, the UK government receives its scientific advice from a committee of scientists, Scientific Advice for Government in Emergencies (SAGE). Whilst SAGE had expert modellers, behavioural psychologists, infectious disease physicians and researchers, there was a crucial weakness – the surprising lack of technical expertise and experience of communicable disease control and outbreak management.<sup>17</sup>

Paradoxically, at the regional emergency planning level, there exist Scientific and Technical Advisory Cells that include this technical expertise, but this is not replicated at the higher decision-making level. There were no practicing Directors of Public Health or Consultants in Communicable Disease Control (CCDCs). The former understand how local health and care systems operate and have an intimate grasp of how local politics and populations behave, as well as how to communicate with them. Similarly, CCDCs are experts in the operational art of communicable disease control in the community, contact tracing, outbreak investigation and management but also understand operational realities.

Technical expertise is often undervalued; technical experts know how to translate science into action and understand realities on the ground and the detail needed to turn ideas into reality. Without them, science and policy intent are just wishful thinking. That is why input is needed from serving public health professionals, senior health managers and civil servants, the apparatus that makes it happen. Indeed, what seemed to be lacking in the government's COVID-19 strategy was a grounding in what was realistically deliverable. This has led, for example, to an obsession with mass testing without any clear appreciation of the scale of the task, the limitations of this approach, its cost-effectiveness and indeed the futility of testing without concomitant population buy-in to support other disease control measures such as self-isolation, social distancing and ubiquitous use of face coverings.

## Political dimension

Politics has certainly compromised public health responses. There has been disproportionate political focus on mass testing in the hope that it is the magic bullet solution to the pandemic. Much focus has been placed on England's faltering publicly funded, private sector-delivered test and trace system. Even if it had been operating perfectly, transmissions may already have taken place by the time people were tested and traced. There is no perfect test or test system that will detect all cases. Consequently, many cases will be missed, especially those that are asymptomatic, and it only takes a few cases to sustain an epidemic. 'Managing' infection numbers alone does not solve it. Tests do help confirm cases, but what is vital is for potentially infected individuals to self-isolate early, often before test results are known.

Furthermore, primary prevention of infection is likely to be more efficacious than test and trace schemes. However, this all depends on changing population behaviours.<sup>18</sup> These include greater public compliance with self-isolation advice when symptomatic, adherence to face mask use, frequent handwashing and social distancing.<sup>19</sup> Similar to all public health programmes, their success depends on the support of the public if the UK is to beat this pandemic. Unfortunately, political support for Dominic Cummings, a high ranking political advisor who broke COVID-19 rules, very likely undermined public support for the government's public health measures.<sup>20</sup> In addition, the political blame game targeting PHE, further compromised the vital public health advice it provides and diminished public trust in this public health agency at the worst possible time during the pandemic.

## Lack of strategic aim

Finally, there is the lack of a clear national strategy for managing the pandemic. It is not clear if the government's aim is for 'zero-COVID-19' elimination, suppression to near zero levels or accepting the virus will become endemic and opting for mitigation. Sadly, the current government seems to have adopted what some might describe as a 'hope for the best' stratagem – a reactive approach focused only on the short-term priorities whilst neglecting to anticipate and prepare for the worst consequences that may arise. Unsurprisingly, public confidence in the UK government's handling of the COVID-19 pandemic has fallen in the past year.<sup>20</sup> In turn, this further erodes public trust in the government's COVID-19 measures.

## Conclusion

If there is one key lesson from the pandemic thus far, it is the need for a well-resourced public health agency focused on biosecurity that is well prepared and able to scale up its response to pandemic threats. It is vital that this public health agency is independent and able to provide credible and trusted scientific and technical expertise and advice to both the government and the public without fear or favour. Public trust and confidence in this public health 'messenger' is crucial to public compliance with the public health messages conveyed. So long as the national public health agency is a branch of a government department, public perception of its independence will be compromised, its advice tarnished and it risks becoming embroiled in party politics.

This pandemic has not yet run its course. To err once is human. To err twice would be negligent.

## Author statements

### Competing interests

A.C.K.L., J.R.M. and P.E. currently work for PHE. B.P. previously worked for PHE. A.C.K.L and J.R.M are coeditors of the journal. The views and opinions expressed in this editorial are solely those of the authors involved and do not represent those of any other agency, organisation or employer that the authors may be affiliated with.

## References

- Office for National Statistics. *Coronavirus (COVID-19) infection survey, UK*. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/coronaviruscovid19infectionsurvey/pilot/30october2020>, 30 October 2020. [Accessed 5 November 2020].
- International Association of National Public Health Institutes. *Public health England (PHE) - evaluation and recommendations*. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/661350/PHE-Evaluation\\_and\\_Recommendations.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/661350/PHE-Evaluation_and_Recommendations.pdf), November 2017. [Accessed 5 November 2020].
- Lawrence F, Garside J, Pegg D, Conn D, Carrell S, Davies H. *COVID-19- Investigations: how a decade of privatisation and cuts exposed England to coronavirus*. The Guardian [online]; 31 May 2020. Available at: <https://www.theguardian.com/world/2020/may/31/how-a-decade-of-privatisation-and-cuts-exposed-england-to-coronavirus>. [Accessed 5 November 2020].
- Evans D. *What price public health? Funding the local public health system in England post-2013*. *Crit Publ Health* 2020 Jan 17:1–2.
- Thomas C. *Hitting the poorest worst? How public health cuts have been experienced in England's most deprived communities*. Institute for Public Policy Research [online]; 5 November 2019. Accessible at: <https://www.ippr.org/blog/public-health-cuts>. [Accessed 11 November 2020].
- Scally G, Jacobson B, Abbasi K. *The UK's public health response to covid-19*. *BMJ* 2020; **369**:m1932.
- Pegg D. *What was Exercise Cygnus and what did it find*. The Guardian [online]; 7 May 2020. Available at: <https://www.theguardian.com/world/2020/may/07/what-was-exercise-cygnus-and-what-did-it-find>. [Accessed 5 November 2020].
- Lee AC, Phillips W, Challen K, Goodacre S. *Emergency management in health: key issues and challenges in the UK*. *BMC Publ Health* 2012 Dec 1; **12**(1):884.
- Balmford B, Annan JD, Hargreaves JC, Altoè M, Bateman IJ. *Cross-country comparisons of covid-19: policy, politics and the price of life*. *Environ Resour Econ* 2020 Aug; **76**(4):525–51.
- West D. *REVEALED: NHS Test and Trace top team includes just one public health expert*. Local Government Chronicle (online); 15 September 2020. Available at: <https://www.lgcplus.com/services/health-and-care/revealed-top-leadership-team-at-nhs-test-and-trace-includes-just-one-public-health-expert-15-09-2020/>. [Accessed 5 November 2020].
- Harding-Edgar L, McCartney M, Pollock AM. *Test and trace strategy has overlooked importance of clinical input, clinical oversight and integration*. *J R Soc Med* 2020 Oct 27. 0141076820967906.
- Vize R. *Too slow and fundamentally flawed: why test and trace is a weak and inequitable defence against covid-19*. *BMJ* 2020 Jun 11:369.
- Rajan S, Cylus JD, Mckee M. *What do countries need to do to implement effective 'find, test, trace, isolate and support' systems?* *J R Soc Med* 2020 Jul; **113**(7): 245–50.
- Park S, Elliott J, Berlin A, Hamer-Hunt J, Haines A. *Strengthening the UK primary care response to covid-19*. *BMJ* 2020 Sep 25:370.
- Halliday J, Campbell D. *Hospital bosses urge NHS England to drop 'unfair' fines as Covid admissions rise*. The Guardian (online); 11 October 2020. Accessible at: <https://www.theguardian.com/society/2020/oct/11/hospital-bosses-urge-nhs-england-to-drop-unfair-fines-as-covid-admissions-rise>. [Accessed 5 November 2020].
- Freedman L. *Scientific advice at a time of emergency*. *SAGE and Covid-19. Polit Q* 2020 Jul; **91**(3):514–22.
- Feinmann J. *Covid-19: UK's chief scientific officer defends make up of advisory group*. *BMJ* 2020 Apr 28:369.
- West R, Michie S, Rubin GJ, Amlöt R. *Applying principles of behaviour change to reduce SARS-CoV-2 transmission*. *Nat Hum Behav* 2020 May 6:1–9.
- Rubin GJ, Smith LE, Melendez-Torres GJ, Yardley L. *Improving adherence to 'test, trace and isolate'*. *J R Soc Med* 2020 Sep; **113**(9):335–8.
- Fancourt D, Steptoe A, Wright L. *The Cummings effect: politics, trust, and behaviours during the COVID-19 pandemic*. *Lancet* 2020 Aug 15; **396**(10249): 464–5.

A.C.K. Lee  
*The University of Sheffield, UK*

P. English  
*Public Health England, UK*

B. Pankhania  
*The University of Exeter, UK*

J.R. Morling\*  
*The University of Nottingham, UK*

\* Corresponding author.  
E-mail address: [MDavis@rsph.org.uk](mailto:MDavis@rsph.org.uk) (J.R. Morling).

Available online 21 November 2020