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Public Accounts Committee Inquiry

Initial Lessons from the Government's Response to the COVID-19 Pandemic

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Executive Summary

- This submission reflects the initial findings of the AHRC-funded Observatory for Monitoring Data-Driven Approaches to Covid-19 (OMDDAC) based on interdisciplinary, interview-based research.

- Data quality and interoperability issues between systems have presented significant challenges, particularly when local and national responses intersect. Government investment in public data architecture is therefore urgently required to address data quality issues and improve interoperability across public sector data (including both health and non-health bodies). A data standards framework should also be agreed and implemented across health and non-health bodies, applying standardised labelling and terminology, so that improved standards are maintained.

- There is a need for greater transparency and proactivity in publishing data, plus additional rationale behind key decisions. Policy decisions should be accompanied by explanatory justifications which identify the additional factors, judgements and underlying assumptions considered as part of the decision and highlight any limitations or uncertainties within the data. In addition, where possible, the data itself (together with its interpretation) should be made publicly available.

- In the absence of further justification or clarity regarding data sharing arrangements, the decision to permit the sharing of public health data with the police appears neither a necessary nor proportionate response to the pandemic. The Memorandum of Understanding (MoU) underlying the data sharing arrangement between the National Police Chiefs' Council (NPCC) and Department for Health and Social Care (DHSC) should be published as a matter of priority.

- Ongoing user-centric monitoring and evaluation of data-driven approaches are fundamental to their success. In addition, resource and training should be directed by local and central government to the following two areas to address skills gaps: public sector information governance; and data literacy of policy decision-makers.

- Overall, a new public conversation is needed regarding the use of data post-pandemic, involving, at the very least, public engagement, but preferably, public consultation to determine the parameters of public acceptability in a number of areas.

Introduction

1. This response is submitted on behalf of the AHRC-funded 'Observatory for Monitoring Data Driven Approaches to Covid-19' (OMDDAC). OMDDAC is a collaboration between Northumbria University and the Royal United Services Institute (RUSI), researching the data driven approaches to Covid-19, with a focus upon legal, ethical, policy and operational challenges. OMDDAC analyses key data-driven responses to Covid-19 and collates lessons learned throughout the pandemic by way of stakeholder interviews, case study analysis, representative public surveys, and practitioner-focussed guidelines.

2. The evidence presented in this contribution has been collected primarily through interviews with key stakeholders from a range of sectors (including local and central government, regulators, law enforcement,

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the medical profession, the legal profession, charities and the third sector, the private sector, and an inter-disciplinary range of academics) for the purposes of OMDDAC's research. Our initial findings have been published in the form of three Snapshot Reports.[3]

3. In this response, we incorporate our findings to highlight lessons learned by stakeholders during the pandemic. Notwithstanding the diversity of approaches examined, our research has identified the following overarching issues which have application to themes identified by the National Audit Office - in particular, 'data and evidence' and 'transparency and public trust' - from which lessons can be learned:

     i.   Data quality and interoperability issues between systems have presented significant challenges, particularly when local and national responses intersect;

     ii. There is a need for greater transparency and proactivity in publishing data, plus additional rationale behind key decisions;

     iii. Ongoing user-centric monitoring and evaluation of data-driven approaches are fundamental to their success.

Data and Evidence

4. Our stakeholders informed us that the sharing and linkage of data from a diverse range of sources has been central in driving the national Covid-19 response, both centrally and locally. The pandemic has demonstrated that an open approach to data sharing can lead to better informed decision-making and greater public good. However, stakeholders highlighted a number of issues, from which lessons must be learned.

5. **Data quality issues**: Stakeholders commonly reported issues around poor data quality, (including errors, omissions, outdated information, and a lack of interoperability across public sector, health and non-health datasets). This issue was reported by stakeholders across the various sectors, impacting upon their ability to operate effectively during this emergency period. Local authorities, for example, experienced significant difficulties in the identification of vulnerable residents to deliver support as a direct result of data quality issues. This issue was also experienced in the context of policing (for example in the monitoring of resourcing and staff wellbeing) and public health (such as in the application of the QCovid risk-scoring algorithm for identifying those who needed to shield, and for the purposes of vaccine prioritisation, resulting in false positive and negative results). Government investment in public data architecture is therefore urgently required to address data quality issues and improve interoperability across public sector data (including both health and non-health bodies). A data standards framework should also be agreed and implemented across health and non-health bodies to implement standardised labelling and terminology, so that improved standards are maintained.

6. **Data governance**: The importance of robust data protection safeguards becomes more pronounced as data-sharing increases. In this regard, information governance should be 'frontloaded' to form an integral part of any data acquisition process from the outset. However, as has been demonstrated during the pandemic, data protection and information governance need not represent a barrier to legitimate data sharing where robust safeguards are in place. Stakeholders observed that information governance professionals within the public sector often tended to employ an overly risk-averse attitude to data-sharing, which can result in unnecessary data acquisition difficulties. To avoid such access issues, for example, those experienced by

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[3] OMDDAC, 'Snapshot Report 1: Data-driven public policy' (2021) https://www.omddac.org.uk/wp-content/uploads/2021/05/OMDDAC-Snapshot-Report-1-Public-Policy.pdf; OMDDAC, 'Snapshot Report 2: Tech-driven approaches to public health' (2021) https://www.omddac.org.uk/wp-content/uploads/2021/05/OMDDAC-Snapshot-Report-2-Tech-Driven-Approaches-to-Public-Health.pdf ; OMDDAC, 'Snapshot Report 3: Policing and Public Safety' (2021) https://www.omddac.org.uk/wp-content/uploads/2021/05/OMDDAC-Snapshot-Report-3-Policing-and-Public-Safety.pdf

local authorities at the beginning of the pandemic with regard to NHS Test and Trace data, central and local government resource and training should be directed to this area of information governance.

7. **Data literacy**: Stakeholders also identified an additional gap in understanding, between mathematical modellers and policy decision-makers (within central and local government). Decision-makers must be well-informed in relation to both the capabilities and the limitations of quantitative data and statistical analysis.[4] Supplementation of quantitative data with contextual information in the form of qualitative data, for example to incorporate localised knowledge, is also crucial. Resource and training should therefore be directed as a priority to address the gap in understanding identified by stakeholders between modellers and policy decision-makers. Interdisciplinary collaboration at leadership level within the public sector and the professionalisation of data science would also be beneficial in this regard. Data ethics principles, linked to legal requirements and independent oversight, such as those promoted by the UK Statistics Authority should form part of the professional framework for data science, which could draw on case studies from the pandemic to avoid 'ethics theatre'.

Transparency and Public Trust

8. The pandemic has demonstrated the beneficial, innovative ways in which data can be used for public good. However, several stakeholders identified a lack of transparency across a range of areas, which must be addressed when considering the role of data-driven approaches post-pandemic. Overall, a new public 'conversation' is needed regarding the post-pandemic use of data, involving, at the very least, public engagement, but preferably, public consultation to determine the parameters of public acceptability in a number of areas.

9. **Public policy decisions**: Greater transparency is required regarding the role of data, and statistical analysis, as part of decision-making processes, including its limitations, to ensure proper public scrutiny. Limitations in this regard include any data quality issues as outlined in paragraph 5, as well as concerns of an epistemological nature. As one of our stakeholders explained regarding the limits of the 'power' of maths and data science, 'it's modelling for illustration, modelling for building understanding, modelling for storytelling and that is it. Because that's such an important part of the epistemology of mathematical modelling and people often assume a naive "push button, computer tells answer" - this is not what I think the purpose of mathematical modelling is […] human judgement also needs to be involved [because] maths can only tell you so much'. Policy decisions should therefore be accompanied by explanatory justifications which identify the additional factors, judgements and underlying assumptions considered as part of the decision and highlight any limitations or uncertainties within the data. In addition, where possible, the data itself (together with its interpretation) should be made publicly available.

10. **Public health response:** The application of algorithmic, data-driven approaches, such as the QCovid risk-scoring algorithm, in a public health context also presents significant transparency issues. Stakeholders raised concerns regarding the uncertainties around using algorithmic tools to inform policymaking in public health, as well as more widely, in particular the 'black box effect' whereby there is a lack of information available pertaining to the factors driving the decision between inputs and algorithmic outputs. This has significant implications for accountability. This is exacerbated by the risk of algorithms developing spurious correlations. For instance, one stakeholder shared that an algorithm which used chest x-rays to detect Covid-19 in patients determined that if the patient was lying down when the x-ray was taken, they were more likely to become seriously ill or die. It is therefore vital to ensure that transparency around the use of algorithms is sufficient, with appropriate monitoring, evaluation, and validation mechanisms in place.

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[4] See paragraph 9 below

11. **Police use of health data**: Sharing of NHS Test and Trace data with the police may have been less effective than originally anticipated due to tensions between the desire for appropriate enforcement, the need to maintain legitimacy across communities, and the difficulty of retrospectively proving self-isolation offences (which does not appear to have been fully appreciated).

12. Firstly, the speed with which the pandemic evolved meant policy and legislation faced an uphill battle to respond in tandem. The Coronavirus Regulations have changed at least 65 times since March 2020 and the Prime Minister himself has acknowledged that, 'over time, the (coronavirus) rules have become quite complicated and confusing'. The decision to permit sharing of NHS Test and Trace data appears to have been made without a clear evidence base on what the impact would be on compliance and the public's willingness to be tested for Covid-19. To demonstrate that police use of NHS Test and Trace data is a proportionate use of policing powers, further research is needed to clarify its impact on self-isolation compliance and willingness to be tested for Covid-19. The outcomes of this research should be reported to the public as a matter of priority.

13. Secondly, there has been a lack of transparency both in terms of Parliamentary scrutiny of new legislation in January 2021, and the content of the Memorandum of Understanding ('MoU') between the National Police Chief's Council ('NPCC') and Department for Health and Social Care ('DHSC'). It was therefore difficult for the general public to understand how public health data was being shared with the police and for what purposes. Uncertainty persists regarding the status of public health data received by the police in relation to other police databases, the mechanisms in place to ensure it is only used for the purpose for which it was obtained, and how long it is retained for. Stakeholders were concerned that the failure to provide assurances via the MoU agreed between the NPCC and DHSC may have created an environment where the public feel disinclined to observe the Self-Isolation Regulations. In the absence of further justification or clarity regarding data sharing arrangements, the decision to permit the sharing of public health data with the police appears neither a necessary nor proportionate response to the pandemic. The Memorandum of Understanding (MoU) underlying the data sharing arrangement between the National Police Chiefs' Council (NPCC) and Department for Health and Social Care (DHSC) should be published as a matter of priority.