Knowledge, data and power: A study on England's pandemic response

Anina Henggeler
Doctoral Candidate, Department of Science, Technology, Engineering and Public Policy, University College London

Abstract

The role of data and analytics in evidence-based policy (EBP) has grown significantly to become essential across government functions such as security, health and education. This trend became particularly evident in England during the COVID-19 pandemic, where diverse data sources were central to public health decisions. However, this reliance on data introduced new dimensions of influence from both state and non-state actors, raising questions about power dynamics in the use of evidence.

In England, as elsewhere, pandemic data governance involved a complex mix of state and non-state actors, including Government bodies, academia, consultancy firms and technology providers. This diverse group played a crucial role in shaping data and analytics for COVID-19 policymaking, ultimately determining what was 'known' or 'unknown' and by whom. The use of data to inform and legitimise public policy had far-reaching implications, with measures such as lockdowns, border closures, quarantines, school closures and curfews significantly restricting individual freedoms and reshaping civilian life on an unprecedented scale.

Observations around the growing role of data in policy have introduced new dimensions of influence on the part of both state and non-state actors, leading to questions about how power is identified and understood in EBP contexts. Despite this, policymakers and scholars still have only limited insight into the role played by power in data use – and, more broadly, in evidence – in public policy. This study addresses this gap by asking *How were data used as a form of power within evidence-based policy during England's pandemic response?* Drawing on Susan Strange and Blayne Haggart's contributions to International Political Economy, this thesis develops a conceptual framework to explore data as a form of power within EBP. The research draws on policy documents and interviews with 20 Government officials to examine the institutional and technical arrangements surrounding contact-tracing data across two case studies.

The first case investigates the NHS COVID-19 App, revealing how Google and Apple's control over application infrastructure limited the Government's data capabilities, thus impacting public health measures. The second case examines the power dynamics between central and local government in manual contact tracing, highlighting how centralisation marginalised local knowledge and capability and thus weakened the crisis response. This thesis brings to the forefront two distinct dimensions of structural power in the use of evidence in policymaking. In light of these findings, this thesis advocates a re-evaluation of EBP frameworks to incorporate structural power dynamics, promoting an approach to evidence use that is better aligned with EBP's original aims of enhancing transparency and accountability in policymaking. Additionally, the thesis offers practical policy recommendations for navigating power dynamics in EBP, particularly in the context of pandemic preparedness. These insights

serve as a call to action, urging researchers and policymakers to adopt a conceptualisation of power within evidence use, developing the EBP framework to achieve a model that is more transparent, accountable and fit for purpose in the 21st century.

Policy Recommendations

The following recommendations aim to strengthen knowledge governance within the context of England's pandemic preparedness, incorporating specific lessons from the empirical contexts analysed in this study. These recommendations offer practical guidance for navigating the power dynamics identified, promoting a more strategic approach to policy development in preparing for a pandemic. Additionally, they offer broader, generalised recommendations for addressing power dynamics in evidence use across policymaking contexts.

These recommendations will be disseminated to policymakers within my professional network, particularly those involved in Evidence-Based Policy at the Department for Science, Innovation, and Technology (DSIT) – the UK government's central body for data and technology matters – where I am currently employed. I will also work with the Policy Impact Unit of UCL's Department of Science, Technology Engineering and Public Policy (STEaPP) in offering these findings as evidence to the ongoing UK COVID-19 Inquiry, specifically its Test, Trace and Isolate (Module 7) which is taking hearings until May 2025.

Recommendation 1: Invest in methods for leveraging human intelligence in a pandemic response:

- **Expand research funding:** The development of systems to gather and validate local, human-sourced insights would provide a more nuanced and accurate picture of the spread of disease in national pandemic responses. Resources should be directed to developing research methods to effectively integrate human intelligence in health crises, building on the UK's longstanding expertise in human intelligence methods.
- **Combine human and digital intelligence**: Integrating local insights with digital data will offer a more nuanced understanding of health crises, strengthening response strategies. In pandemic preparedness planning, consider combining human intelligence with digital intelligence for a comprehensive knowledge-governance approach.
- **Build relationships with local actors pre-crisis:** Foster trust and develop knowledge networks with local decision-makers and health intelligence teams in advance of public health crises, establishing communication channels that can be activated rapidly during a crisis.

Recommendation 2: Implement strategic knowledge governance for enhanced pandemic management:

- **Integrate more detailed knowledge-governance planning into pandemic preparedness:** Strengthen planning for knowledge-governance frameworks as part of pandemic preparedness efforts. Proactive planning will enable a more strategic approach to delivering effective knowledge-governance models that inform public health decision-making during crises.
- **Re-evaluate knowledge-governance models:** Re-evaluate existing knowledge-governance models to prioritise the delivery of information that directly supports emergency responses. Rather than defaulting to centralised control, design knowledge-governance systems to optimise insights that best support crisis management.

Recommendation 3: Evaluate structural vulnerabilities and limit the influence of Big Tech in public health emergencies:

- **Conduct risk assessments and contingency planning on critical data infrastructure**: Evaluate dependencies on critical data collection platforms, such as iOS and Android, to identify vulnerabilities in a public health emergency context. Emphasise the assessment of Big Tech's control over critical data infrastructure to mitigate potential misalignments between private sector interests and public health goals.
- **Consider strengthening emergency legislative oversight over critical data infrastructure to limit private sector control:** Consider enacting legislative measures to ensure access to critical data infrastructure needed for public health purposes in emergencies. Such policies could reduce

es where corporate policies conflict with public health needs. This recommendation should be considered in conjunction with Recommendation 4 (below).
- **Promote international collaboration:** Build alliances with international partners to increase collective political leverage over Big Tech. Coordinated multinational efforts can help establish robust standards and regulations that can more effectively align corporate actions with public health objectives during crises.

Recommendation 4: Reinforce safeguards against function creep and public surveillance:

- **Strengthen legal protections:** Introduce legal frameworks with strict limitations on Government surveillance and data usage during and after emergencies, including sunset clauses similar to those in the CCA, to mitigate the risk of public sector function creep in public health surveillance.
- **Enhance ethical oversight:** Develop ethical frameworks to support evidence-based decision making that balance trade-offs between core societal values such as privacy and public health. Consider establishing an independent statutory body to support the UK's SAGE by advising on the ethical implications of recommendations, such as those involving the balance between the right to privacy and the need to protect the public's health.

Recommendation 5: Integrate technical considerations into data governance:

- **Acknowledge the technical dimensions of data as material power**: Recognise that data, as a fundamental form of evidence in public policy, carries technical and material power dimensions that can influence governance structures and policy outcomes.
- **Incorporate technical considerations into policy development**: Ensure that policy recommendations explicitly recognise the technical and material aspects of data governance. This includes evaluating how technical infrastructures, data collection methods and analytical tools could impact evidence use and shape policymaking processes.
- **Assess data infrastructure and capabilities for crisis contexts**: Regularly evaluate Government data infrastructure, capabilities and dependencies, especially in relation to non-Government actors such as private technology firms. Ensure that these assessments include contingency planning for crisis contexts, when rapid access to accurate data may be critical.