



Responding to COVID-19 in the Liverpool City Region

Towards an “Asset-Based” Indicator Framework
and Data Dashboard for the Liverpool City Region

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Map of Liverpool City Region Combined Authority (LCRCA) boundary (in red) and constituent local authorities



Data sources: Westminster parliamentary constituencies (December 2018 - ONS), local authority districts (December 2018 - ONS), and combined authorities (December 2018 - ONS)

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Key takeaways

1. The COVID-19 pandemic has forced the migration of many everyday activities and interactions online. Among the digital innovations implemented during the crisis is the use of data dashboards to visualise, monitor, communicate, and inform the public and decision-making over public health and the economy.
2. Data dashboards proliferated as instruments of urban governance since the 2000s, particularly in the context of “smart city” initiatives. However, such digital tools have come to even wider prominence during the pandemic, for example, with dashboards enabling policymakers and the public to track the spread and intensity of coronavirus.
3. Although dashboards can assist in combating what the World Health Organization has characterised as an “infodemic”, problematic aspects concerning their use in the context of the pandemic include data gaps, poor design and deployment, digital inequalities, and low data literacy levels among policymakers and the public.
4. The positive role and potential of dashboards should not be taken for granted. Better understanding how dashboards – their underlying data, choice of indicators, presentation, and deployment – have influenced urban governance is critically important for policymakers as the crisis evolves towards recovery.
5. This briefing introduces both the Liverpool City Region (LCR) COVID-19 Recovery Monitor and the “Bridging the Community Asset Data Gap” pilot project being progressed by the Heseltine Institute with the LCR Combined Authority and civil society partners. These initiatives are working towards mobilising alternative place-based and people-focused indicator frameworks, to inform an inclusive economic recovery from the pandemic.

1. Introduction

The COVID-19 pandemic has forced the migration of many everyday activities and interactions online, not least for those now able to work from home. Organisations across all sectors have transitioned to delivering services remotely, markedly reconfiguring their ways of working, while those such as museums and galleries have enhanced digital access to their [spaces and collections](#). Government likewise reacted swiftly to the continuity challenges posed by the crisis, rolling out vital new online services in a matter of weeks while ramping up digital communications with the public via the [Notify service notification](#) (Freeguard et al. 2020). Although the pandemic has exacerbated the “digital divide”, demanding a significant policy response

and investment, the shift towards digital government has undoubtedly intensified.

Among the digital innovations implemented at an early stage of the crisis is the use of data dashboards to visualise, monitor, communicate, and inform decision-making over public health and the economy. For example, the UK Government’s [COVID-19 dashboard](#) was launched in April 2020 with a view to bringing “all the essential data and statistics about COVID-19 in the UK together into one place” (Flowers 2020). The contract-tracing app for England may be a better known digital tool, unfortunately for problematic reasons concerning its delayed introduction, effectiveness, and data privacy. However, data dashboards have also featured

prominently in the media and government communications.

This policy briefing focuses on the increasing importance of data dashboards to urban governance and communicating data to the public. It outlines the multiple uses of dashboards by policymakers during the COVID-19 pandemic, situating their proliferation within the emergence of “smart city” initiatives around the world. Concerns and critical questions raised in the scholarly and grey literature over their purposes and performance are highlighted.

Finally, the narrative centres on the Liverpool City Region (LCR), introducing both the [LCR COVID-19 Recovery Monitor](#), and the Heseltine Institute’s recently-begun “Bridging the Community Asset Data Gap” pilot project. The latter seeks to inform an inclusive recovery from the pandemic by exploring the co-creation of an indicator framework and dashboard founded upon an asset-based approach to local community economic development. At an early stage in its evolution, this work will progress in 2021 in collaboration with the Liverpool City Region Combined Authority (LCRCA) and civil society partners within the City Region.

2. Dashboards and their uses

Data dashboards have proliferated as tools of governance since the 2000s, particularly in the context of smart city initiatives promoted by urban and regional governments and assorted multinationals. Their burgeoning influence within what Shannon Mattern (2015) calls the “age of Dashboard governance”, is especially founded upon technological advances in the generation, analysis, visualisation, and dissemination of “real-time” and “big data” through the internet (Kitchin et al. 2015).

The wider adoption of these tools and related indicator frameworks is also predicated on their utility for monitoring, assessing, and bench-marking the performance of cities and public services, with a view to shaping policies and improving decision-making.

Here, dashboards are understood to be “graphic user interfaces which comprise a combination of information and geographical visualization methods” (Pettit & Leao 2017). That is, they typically consist of a mixture of numbers, narrative, graphs, and GIS-based maps that visualise complex data in an easily understood and interactive/searchable format. This data is usually communicated via a single visual display indicating the current “state of play” analogous to a car dashboard. Among the most widely cited examples are those in [New York](#), [Sydney](#), [London](#), and [Dublin](#), which are diverse in their emphasis and thematic coverage, ranging from the economy (e.g. wage levels) to transportation, housing, environment (e.g. air quality), education, and population health.

Similar to the data used in their construction, the functionality and intended uses of dashboards can vary widely. For example, are they public-facing and accessible externally or for internal organisational/network use only? Is their underlying data available to the public open access? Are the indicators describing, measuring existing or predicting future performance? The answers speak to their ultimate purpose and how dashboards are mobilised by institutions within governance processes. Table 1 incorporates some of the key criteria through which dashboards can be analysed and better understood.

Table 1. Key characteristics for understanding and categorising digital dashboards

Criteria	Type	Description / questions
Dashboard audience / users	Public-facing	Accessible to all, e.g. online
	Internal to organisation / network	Only available to those within organisation and not for public consumption
Access to data	Open data	Freely available to everyone
	Closed data	Internally generated or externally acquired through license?
Data frequency	Pre-processed	Analysed (by whom?) before display on dashboard
	Real-time	From which source(s)? e.g. city sensors, social media, satellite
Data geography	Lower Layer Super Output Areas, local / combined authority, regional, national levels, etc.	Consistent data geography across dashboard indicators?
Dashboard indicators	Single	Measuring a single phenomenon, e.g. unemployment rate
	Composite	Indexing and measuring using multiple indicators e.g. GDP
Purpose of indicators	Descriptive / contextual	Typically used to chart phenomena over time
	Diagnostic / performance / target	Used to diagnose a problem, assess performance and / or work towards measuring impact
	Predictive / conditional	Oriented towards predicting and galvanising future performance
Indicator themes	Transport, environment, economy, health, etc.	Key focus of dashboard indicators

(Source: adapted from Pettit & Leao 2017; Kitchin et al. 2015; Young & Kitchin 2020)

Critical questions

The productive potential and positive role of dashboards in urban governance should not be taken for granted. Indeed, pertinent lines of critical inquiry include the following:

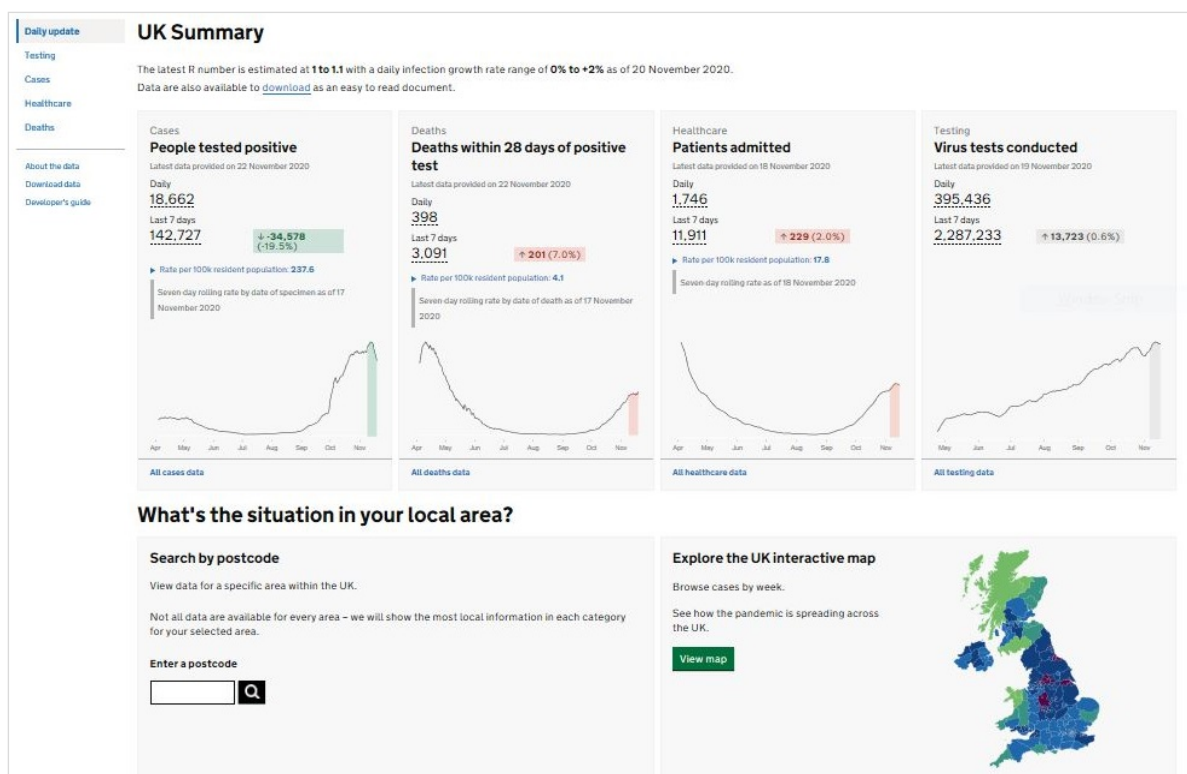
- 1) From a user-centred perspective, the design, usability, and utility of dashboards for multiple audiences – focused on such features as their visualisation (e.g. use of maps, charts, interactivity), and web design (e.g. landing page layout, usability) – is ripe for evaluation (Young & Kitchin 2020);

- 2) Although cities are “messy, complex systems” (Mattern 2015), many smart city initiatives proceed from the basis that it is possible to fully comprehend, measure, and represent cities through statistical data and visualisations. Thinking about what dashboards “do”, how they “produce and shape the world”, the value judgements and limitations embedded within their construction, are also vital (Kitchin et al. 2015);
- 3) Others scholars (e.g. Lock et al. 2020; Pettit & Leao 2017) raise important questions over whether dashboards can empower citizens to engage and support the two-way exchange of information. How participatory and collaborative are urban dashboards?

3. COVID-19 and digital dashboards

Although a proliferation of dashboards preceded the pandemic, the “digital acceleration” and channelling of work, educational, and social activities online has drawn such tools to wider public prominence outside of smart city discourses. For example, the UK Government’s COVID-19 dashboard receives up to [five million web hits a week](#), indicating the demand for data on the unfolding health care picture nationally and locally – see Figure 1. This informs not only the work of civic leaders and policymakers, but also the everyday decisions that individuals and households make in navigating the challenges of coronavirus lockdowns and other public health measures.

Figure 1. Interface and interactive search features of the UK Government’s COVID-19 dashboard



(Credit: [GOV.UK Coronavirus \(COVID-19\) in the UK](#))

What purposes have dashboards usefully served during the pandemic?

Among their prospective applications, digital dashboards have enabled policymakers and the public to track the spread and intensity of coronavirus worldwide. The Johns Hopkins University's [COVID-19 Dashboard](#) is perhaps the best-known example, providing daily updates on official figures for cases and deaths from 191 countries and regions. The UK Government's dashboard similarly presents daily updated information on positive cases, deaths, healthcare (e.g. patients admitted to hospital), and testing numbers across England, Scotland, Wales, and Northern Ireland.

A second application concerns government policy responses to the pandemic. For example, the Organisation for Economic Co-operation and Development's (OECD) [COVID-19 Country Policy Tracker](#) compiles data and analysis on the diverse health and economic measures deployed by governments around the world. Among other benefits, the tracker seeks to facilitate co-ordination between national responses, the sharing and promotion of policy learning, and the speedy transfer of "what works".

A third, and final, application noted here relates to the economic impact and recovery from the crisis, with the latter increasingly in focus given positive developments in relation to vaccines. These dashboards have generally been created by think tanks and private sector companies such as banks and global consultancies to track and monitor economic indices, e.g. the [Centre for Cities High Street Recovery Tracker](#).

Concerns about their performance and use

COVID-19 dashboards are mechanisms through which to relay timely and accurate information to policymakers, the media, and the public. As such, they can assist in combating what the World Health Organization [characterised as an "infodemic"](#), concerning both an overabundance of information and prevalence of misinformation spread through social media. Indeed, researchers have suggested the creation of a platform to provide "real-time alerts of rumours...about coronavirus" with a view to mitigating fearmongering and conspiracy theories (Depoux et al. 2020).

However, problematic aspects are also apparent in relation to dashboards, their component parts and data, as well as use in the context of the pandemic, including those developed and maintained by official government agencies. These overlap with the reservations and critical questions raised in section 2 above. Among the specific issues raised, include:

- [Data gaps](#), particularly the quality, consistency, and availability of up-to-date data at the local level, for instance, in connection with the NHS Test and Trace system in England (Wise 2020). Ultimately, such gaps hamper efforts to monitor infection "hot spots" and implement effective action to reduce COVID-19 transmissions within the community;
- [Poor design and deployment](#), with scholars such as Mooney and Juhász (2020) focusing on the increasing use of web-based maps, which are frequently poorly executed, misinterpret the underlying data, and fail to capitalise on their potential to communicate complex geographic information to the public;

- Digital inequalities and data literacy, with the application of dashboards as communicative tools by institutions predicated on pervasive access and good data literacy among the public. While the pandemic has accelerated the pace of digital transformation within society, it has also exacerbated the digital divide and associated inequalities (Allmann 2020).

Their policymaking role as the crisis evolves towards recovery

While the review above focuses largely on the use of dashboards for communicating externally to public audiences, how they have been harnessed (or ignored) internally by policymakers to help shape policy design and inform decision-making during the pandemic is not well-explored or understood. This knowledge gap is significant, especially given that variable data literacy levels also exist within policy communities. Thus, better understanding how digital dashboards – their underlying data, choice of indicators, presentation, and deployment, etc. – have influenced critical governance processes, merits further attention.

4. Liverpool City Region COVID-19 Recovery Monitor

In response to the large amounts of data being published on the impacts of COVID-19, the data analysis team at the LCRCA created the Liverpool City Region COVID-19 Recovery Monitor in order to track local data related to economic recovery. Specifically, the Monitor includes data on

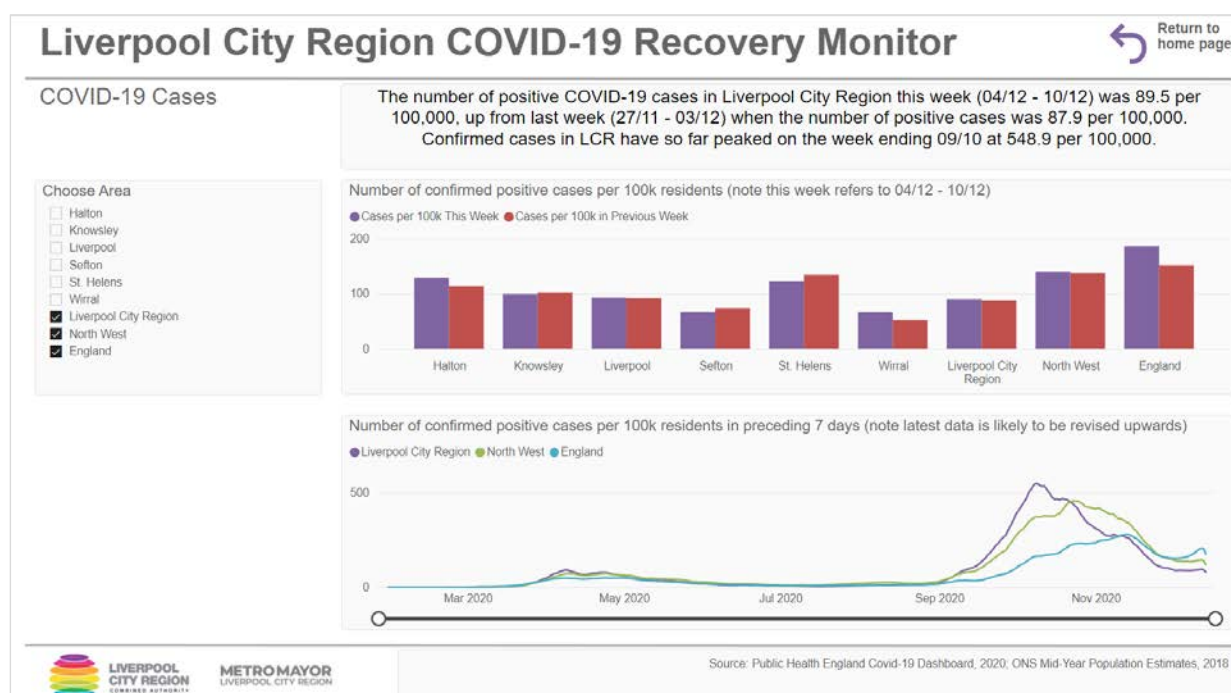
businesses, economic activity, and the labour market, as well as data on COVID-19 tests and positive cases. There is an additional section also that includes intelligence on major business closures and job losses both locally and nationally.

The Monitor's primary purpose is to act as a singular destination for Combined Authority colleagues, local authorities, and external stakeholders to view up-to-date local data and insight on LCR's economic recovery. By displaying the data in an interactive dashboard, key messages can be quickly gathered through visualisations, whilst also allowing users to dive deeper into the data if they so desire. Furthermore, the dashboard format allows the Monitor to be shared easily and updated without the need to re-issue it, as would be the case if it was published via a static document.

In order to best serve its intended audience, an effort has been made to ensure that all the data in the Monitor is presented at as local a level as is available. Unfortunately, this is not possible for some of the datasets used in the Monitor, though local estimates have been derived from national figures where the data allows for this.

The Monitor is a living tool that has been updated and adapted on numerous occasions. This has most often occurred in response to comments from users, after datasets have been re-formatted by their publishers, or to accommodate new data sources. As further relevant datasets are made available to LCRCA, it is likely that the Monitor will continue to evolve.

Figure 2. Example page from Liverpool City Region COVID-19 Recovery Monitor



(Source: [Liverpool City Region COVID-19 Recovery Monitor](#))

5. Bridging the community asset data gap in Liverpool City Region

A pilot project – “Bridging the Community Asset Data Gap: Building Back Better in Liverpool City Region” – being progressed by the Heseltine Institute, with the LCRCA and civil society partners, will explore the co-creation of place-based and people-focused indicator frameworks and dashboards, centred on an inclusive economic recovery from the pandemic. In essence, grasping the opportunity to embed long-term resilience within recovery plans, and to set, monitor and realise achievable outcomes with communities, demands alternative indicators and approaches mobilising local assets to drive transformational socio-economic change.

Two important project focal points include:

- Mobilising an asset-based approach to local community economic development encompassing alternative recovery indicators

focused on utilising existing resources, opportunities, and strengths present within communities (Co-operatives UK 2017), generated through a participatory, appreciative inquiry process; and

- Investigating inclusive ways of story mapping and representing the local community assets identified through the project via data dashboards and other approaches to digital visualisation.

The project seeks to develop understanding of how asset-based approaches to local economic development can be integrated into the post-COVID “[Building Back Better](#)” strategy in the LCR (with potential application more widely to other places).

Thus, it will identify gaps in the data ecosystem informing policy responses to recovery – e.g. demanding new indicators and data collection approaches – and co-create a framework to allow local

economic, social, and environmental assets to be utilised more effectively in development strategies.

As a pilot study, the project team is realistic about what can be achieved in a short timeframe. However, the approach pursued can help mainstream and scale up asset-based approaches to local economic development within LCR in the context of pandemic recovery. Co-developing alternative indicators and approaches to data collection can ultimately feed into the emergence of localised, public-facing, and participatory digital dashboards within the City Region.

With the LCRCA currently consulting on the first [Digital Strategy & Action Plan](#) for the City Region – 13 January 2021 being the closing date for responses – individuals and communities have the opportunity to shape how dashboards and other digital tools are used for future communication, service delivery, and within urban governance more broadly.

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The information, practices and views in this Policy Brief are those of the author(s) and do not necessarily reflect the opinion of the Heseltine Institute.

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