THE IMPORTANCE OF PERCEPTION

Assessing the Public's Perceptions of the London Borough of Hounslow's COVID-19 Response

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WPI

London Borough of Hounslow

The Importance of Perception:
Assessing the Public's Perceptions of the London Borough of Hounslow's COVID-19 Response

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Abstract

We assessed public perceptions concerning the London Borough of Hounslow's (LBH) COVID-19 response to improve adherence to policy in future contingency plans. We created a comprehensive policy timeline to contextualize LBH initiatives and surveyed 70 residents to explore public perceptions. Survey participants perceived PPE, testing, and vaccines as accessible and policy communication as effective. Participants' perceptions of local policies reflected the national response discourse. We recommend the LBH collect and analyze a representative survey sample and expand outreach methods.

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Glossary

BBC	British Broadcasting Corporation
CAT.	Category
COVID-19	An infectious disease caused by the SARS-CoV-2 virus
DCMS	Department for Digital, Culture, Media and Sport
DHSC	Department for Health and Social Care
HRCPT	Hounslow Resilience and Contingency Planning Team
Hounslow House	London Borough of Hounslow government operations building
Free Community Testing Centers	Created in Hounslow to promote availability of COVID-19 tests to the general public
LBH	London Borough of Hounslow
LFT	Lateral Flow Test
LTS	Local Test Site
M.C.	Multiple Choice
MTU	Mobile Testing Unit
NHS	National Health Service
PPE	Personal Protective Equipment
PR	Psychological Reactance
Outdoor Spaces	Created during the pandemic for social distancing in Hounslow
S.A.	Short Answer

Shop Local Initiative	Households were given £20 vouchers to spend in local shops to promote business continuity
Stepping Up for Hounslow	Creation of pop-up vaccination clinics in Hounslow in efforts to slow the spread of the Delta variant
Vaccine Bus	A mobile vaccination unit which travels to local areas to increase vaccine accessibility

Executive Summary

The UK's previously lacking pandemic infrastructure meant that national and local governments had to implement new policies at breakneck speed while working with a multitude of unknown factors to keep up with the spread of COVID-19. Each wave brought new challenges in effectively controlling virus spread while protecting citizens. Now that some governments are moving into COVID-19 recovery phases, many are trying to assess their communities' sentiments regarding pandemic policy.

Understanding public sentiment surrounding pandemic policies is vital to assessing a pandemic response. Feedback on initiatives can inform policymakers on their successes and necessary areas for improvement. Further, public perceptions directly correlate with the adherence to pandemic procedures and practices (Seale et al., 2020). Finally, public approval improves trust in the government.

The Hounslow Resilience and Contingency Planning Team (HRCPT) operates within the London Borough of Hounslow (LBH) and is responsible for the borough's emergency planning, response, and outreach (Carey, n.d.). During the COVID-19 pandemic, the HRCPT oversaw initiatives involving personal protective equipment (PPE) distribution, outdoor spaces for social distancing, and widespread testing and vaccination sites (Curran, 2020). Additionally, the LBH drafted a response plan for future crises, which includes improving business resilience and reducing socio-economic inequality.

To create a holistic recovery plan that improves policy adherence and engagement, the LBH wanted to understand the public's perceptions of their past COVID-19 initiatives. This project analyzed key themes in the LBH response to the COVID-19 pandemic and the Hounslow public's perception of the LBH COVID-19 response.

Methods

We developed two objectives to analyze key themes in the public's perception of the LBH COVID-19 response: first, to develop timelines of the LBH COVID-19 response to compare to the UK response, and second, to explore and report public sentiments and ideas for improvement toward LBH policies.

For the first objective, we compiled a comprehensive and interactive timeline from publicly-available sources. We grouped the contents into six categories: closures, distancing, PPE, testing, vaccines, and COVID-19 milestones to gain context on the LBH and UK COVID-19 responses.

This context not only helped our team distinguish the UK response from the LBH response but also enabled us to design survey questions about LBH initiatives.

For our second objective, we used information we gathered from a semi-structured group interview with the HRCPT to design a survey to assess how Hounslow residents perceived the effectiveness and accessibility of COVID-19 initiatives. Our in-person survey contained questions involving demographics, perception of COVID-19 policies, and perception of Hounslow-specific initiatives. We administered the surveys by distributing flyers to pedestrians, leaving posters in businesses, and conducting in-person surveys. Our sample size was 70 participants, composed of an older age group than the Hounslow borough demographics. Our main limitation was our inability to reach all demographics due to both distribution duration and language barriers.

Results & Analysis

Spanning from March 2020 to April 2022, the timelines explore the national and local responses by wave and case numbers. The comprehensive timeline allows the HRCPT to understand its policies both as a whole and specifically by wave. The timelines will directly benefit the LBH COVID-19 response evaluation framework. The staff will also use the timelines to provide context and set meeting agendas for the upcoming response debriefing meetings held within the department. By comparing the timelines of initiatives with COVID-19 cases in the borough, COVID-19 milestones, and lockdown information, the LBH can learn more about possible successes and shortcomings in restriction implementation and resource access. We found in our timeline analysis that the LBH initiatives reflected priorities in testing and vaccine access.

The key findings from our pilot survey data are outlined below:

1. **Respondents believed that the LBH COVID-19 restrictions were implemented too slowly.**
   Qualitative data from our survey supports this claim. Many participants perceived that the LBH preventative policies were less effective than they would have been if implemented sooner.
2. **61% of respondents thought the LBH COVID-19 communication was effective.**
   The majority of survey respondents thought the LBH communication of their COVID-19 regulations was generally effective. Of this approving group, most maintained that communication was very effective.
3. **Respondents perceived PPE, testing, and vaccines to be accessible.**

Survey respondents strongly perceived easy accessibility to PPE, testing, and vaccines. All three had an average perceived accessibility above 4 out of 5 (representing "very accessible"). This high perceived accessibility reflects the LBH's focus on community resource access in the second and third waves.

4. **Resource accessibility was not influenced by preferred mode of transportation.**
   Respondents who walk, bike, or use public transportation perceived resources to be as accessible as the average car user.

Conclusions & Recommendations

Based on the findings above, we outline the following recommendations for the LBH to consider in future contingency plans.

1. **We recommend the LBH distribute a borough-wide survey and include LBH branding to increase the sample size.**
   Acquiring a larger and more representative sample of the Hounslow public will provide further insight into public perceptions of the LBH response. To obtain this sample, we recommend the LBH conduct a follow-up survey featuring government branding. Possible distribution methods include mail drops, social media polls, email surveys, in-person interviews, telephone surveys, and focus groups. This outreach can be done either directly by the LBH or through a hired survey distribution firm. We further recommend that the LBH collaborate with community outreach groups in distributing surveys to improve engagement within their communities. Finally, we recommend the survey be translated into multiple languages due to Hounslow's language diversity.
2. **We recommend that the LBH expand their communication methods for their policies.**
   Our survey results showed that older respondents thought the LBH communication of COVID-19 policies was excellent. However, younger residents thought communication was insufficient. We recommend that the LBH use more online methods (e.g., social media) to communicate their policies to younger residents more effectively.

We maintain that our recommendations for the London Borough of Hounslow will improve response communication and implementation, and lead to greater public approval.

1.0 Introduction

What happens when policymakers are confronted with a global pandemic of an entirely new and unknown virus? In the case of the UK and SARS-CoV2 (or COVID-19), operating based on infrastructure constructed for the common flu led to 21.8 million infections and almost 200,000 deaths in only two years (GOV.UK, n.d.-b). Confronted with an unprecedented requirement for emergency response and planning, the local and national governments within the United Kingdom were forced to rapidly predict the ever-changing needs of their citizens in a pandemic environment.

In the two years since the onset of the coronavirus, researchers have extensively explored the quantitative effects of COVID-19 policies (Maloney et al., 2020 ; Dergiades et al., 2020 ; Sun & Zhai, 2020) Statistical and political effects of governments' timing, policy scope, and resource availability dominate the literature, while researchers have focused less on the public's perceptions of their local government's response. This area of research is crucial to explore because public approval of government policy directly improves response effectiveness. Existing research on the effects of COVID-19 restrictions on citizens shows that public approval led to better adherence to policy and minimized negative mental health outcomes including loneliness, anxiety, and higher suicide rates (Thorpe Huerta et al., 2021). One possible way to address the existing knowledge gap is to compile a comprehensive policy timeline and analyze how the policy translated into the community's perception of COVID-19 initiatives.

This project analyzed key themes in the Hounslow public's perception of the London Borough of Hounslow (LBH) COVID-19 response. To conduct this analysis, we worked with the Hounslow Resilience and Contingency Planning Team, or HRCPT. The HRCPT is an emergency preparedness body within the LBH that handles community resilience in the face of disasters, like global pandemics. The LBH is a council of one of the 32 boroughs of London, United Kingdom. The HRCPT plans to join other London boroughs in a series of meetings during 2022. There will also be meetings nationally with other United Kingdom organizations. The LBH will discuss and review the public's perceptions of policy and ideas for improvement to implement in future response initiatives.

Our project comprised two objectives. We first developed a timeline of the LBH response and compared it with the national response. The timeline identified overlaps between the local and national responses and outlined Hounslow-specific policies to gauge public opinion. Simultaneously, we

compiled a Hounslow-specific timeline detailing initiatives within the borough compared with local case numbers. The LBH can use these timelines for internal reflection and improvement of future contingency planning. Secondly, we explored and reported public sentiments toward HRCPT policies regarding distancing, personal protective equipment, closures, testing, and vaccines. To achieve these objectives, our team worked with the LBH to gather the local public's opinions of its coronavirus response initiatives. We started by gaining a background of Hounslow-specific response initiatives through a group interview with HRCPT personnel. We then distributed a comprehensive survey to the Hounslow community, asking a series of scaled 1-5, yes or no, and short answer questions regarding topics on general policies and LBH-specific initiatives. From a total of 70 responses, we observed preliminary themes in the participants' perceptions of the LBH key initiatives.

Our study builds on emerging literature exploring public perceptions of COVID-19 policies (Chadwick et al., 2021 ; Taylor & Asmundson, 2021 ; Williams et al., 2020). By understanding how the public perceived their COVID-19 initiatives, the LBH can improve policy-making in the future.

In this report, we provide a literature review of COVID-19 in the UK, the national response, public sentiment's role in policymaking, and the London Borough of Hounslow. In our methods, we detail the procedures of developing our timelines and distributing and administering surveys. We also discuss the factors that may limit the usefulness or applicability of our findings. Finally, we summarize our report with our results, conclusion, and recommendations.

2.0: Literature Review

In this chapter, we first outline the topic and importance of public perception in a pandemic environment. Next, we describe the COVID-19 response in the United Kingdom, addressing notable successes and shortcomings by the government. Finally, we narrow our lens to the London Borough of Hounslow (LBH) and the Hounslow Resilience and Contingency Planning Team (HRCPT), the group within the borough that responds to disaster situations.

2.1 The Importance of Perception in a Pandemic

Since 1930, public opinion surveys have been utilized to effectively assess political opinions of members of the public (Berinsky, 2017). Understanding individuals' perceptions of policy is important because it directly correlates with adherence to recommended procedures and practices, especially in a pandemic environment (Seale et al., 2020).

Members of the public are more likely to follow pandemic policies that they perceive in a positive light. Positive public perception leads to trust in the government and adherence to policies. (Moxham-Hall & Strang, n.d.). The policymakers that implemented the response initiatives can use community input to gauge whether they were successful in communicating with and gaining the trust of their community. This trust can change future engagement and outreach success and influence how governments respond to future disaster scenarios. If a community perceives the government's response poorly in one instance, it may maintain long-term distrust and anger. These feelings may then resurface when citizens are faced with future disaster response.

In addition to government disapproval, research on the effects of pandemic restrictions on citizens shows that prolonged mandates result in an array of negative physical and mental health outcomes. These outcomes range from disrupted sleep schedules, loneliness, anxiety, and depression to an increase in the worldwide suicide rate (Thorpe Huerta et al., 2021). As governments continuously adjusted their policies to address public health during the height of the COVID-19 pandemic, the need for continuous observation of their community's sentiments was just as crucial.

According to a 2020 study, public approval led to better adherence to policy and minimized negative mental health outcomes (Al-Hasan et al., 2020). However, public approval is often difficult to

achieve, as there tend to be many obstacles such as political polarity and misinformation campaigns on social media outlets such as Facebook and Twitter (Thorpe Huerta et al., 2021).

2.2 Public Perception and Facemask Adherence

During the Spanish Flu Pandemic that spread through San Francisco in the late 1910s, the Anti-Mask League formed to resist the government's attempt to mandate the wearing of face masks in public. The group argued that masks were ineffective, inconvenient, and in violation of civil liberties (Shelton, n.d.). 100 years later, the same arguments were at the foreground of public sentiment disputes regarding COVID-19 and the preventative measures laid out by local and national governments.

In the early months of the pandemic, the World Health Organization (WHO) revised their recommendation from suggesting wearing no mask to widespread mask adoption. Despite this revision, many misconceptions and doubts about the effectiveness of face masks remained (Taylor & Asmundson, 2021). In a widespread survey conducted in July and August of 2020, 10-15% of adults in the United States and Canada reported that they rarely or never wore masks in public (Igielnik, 2020 ; Yermal Jr, 2020). This number reflected the highly vocal anti-mask movement that sparked widespread protests and rallies throughout the US, Canada, and Europe. These protests were sometimes violent and were laced with conspiracy theories like the false assertion that the government was exaggerating the threat of COVID-19 to control its populations (Chadwick et al., 2021; Taylor & Asmundson, 2021).

From the survey findings, the most common reasons against mask-wearing were respondents believing masks were ineffective, finding masks uncomfortable to wear, and experiencing difficulty in establishing a habit of mask wearing. Further reasoning included believing a mandate violated civil liberties, thinking that mask wearing is harmful because it makes breathing difficult, and maintaining that the threat of COVID-19 has been exaggerated (Taylor & Asmundson, 2021).

Researchers in the field of public sentiment and psychology correlate a person's readiness to wear a mask to their level of psychological reactance (PR). Psychological reactance is an innate response to laws or regulations that the individual might perceive as a threat to their freedom. Researchers have recently linked individuals' levels of PR with mindsets of denial or disregard for the COVID-19 pandemic. Because PR is an innate property, common methods like expanding education efforts are actually detrimental to encouraging people with anti-mask attitudes to wear PPE (Taylor & Asmundson, 2021). A study on PR and its links to anti-mask attitudes found that messaging that

highlights personal choice is the best strategy to encourage widespread adherence. Slogans like "The choice is yours" emphasize freedom of choice and help to disengage heightened feelings of threat. (Taylor & Asmundson, 2021).

2.3 Public Perception and Social Distancing Requirements

In the first few weeks of the UK lockdown, social science researchers observed major themes in the public's feelings toward social distancing and isolation guidelines. People felt lost without their daily job and routine and criticized how the government went about communicating social distancing rules and guidelines (Williams et al., 2020). Researchers observed that citizens exhibited a lack of trust in the government and a lack of understanding of the social distancing and isolation guidelines. Finally, the researchers observed that people felt uncertain about the future. The public questioned if social interactions would ever return to pre-pandemic levels while others were eager to jump back into social activities.

Due to social distancing requirements, many people either worked remotely or lost their previous employment. This adjustment caused widespread feelings of loss, either from income or social interaction. These feelings led to decline in mental health (Hwang et al., n.d.). Without a reliable schedule, people experienced a loss of structure and routine, which led to an increase in mental health issues involving motivation and self-worth.

Researchers observed that participants thought that government communication of social distancing and isolation guidelines was unclear (Bermingham, 2020). This lack of clarity led to general sentiments of distrust for the government. Further, the issues of social distancing and isolation regarding COVID-19 were highly politicized, making it hard for people to determine what information was true and what information was swayed by political biases. With the lack of clarity came loopholes that some people exploited. At one point, people were only allowed to go out for "emergency reasons," but there was no way to prove what was an emergency. Further than a lack of trust in the government, people seemed to have a lack of trust in each other. Some felt that, while they adhered to social distancing and isolation guidelines, their peers did not. This theme was most commonly observed in people with elderly or immunocompromised relatives (Williams et al., 2020).

2.4 Public Perception and Vaccine Uptake

Following the initial rollout of COVID-19 vaccines in the UK and USA, several fringe news outlets started publishing misinformation about the vaccine and its effects (Kasprak, 2020). While many of these publications were USA-based, the misinformation quickly spread around the world. A survey in June 2020 found that only 38% of the UK public would accept a COVID-19 vaccine (Christie, 2021). These numbers reflect the traction that vaccine misinformation gained because of its ability to build on preexisting fears and doubts about the vaccine, reinforcing them and justifying people's decisions against getting vaccinated (Loomba et al., 2021).

Similar themes of vaccine hesitancy are shown in the current resurgence of measles in the UK. Although a majority of people believe that vaccines are trustworthy and are therefore vaccinated, an increasing number of people are avoiding vaccines. The effect of this hesitancy is measles' current vaccination rate (87%) falling below the 95% needed for herd immunity (Burki, 2019).

In an effort to battle vaccine hesitancy, local and national governments are actively attempting to reduce vaccine misinformation. The NHS partnered with the Department for Digital, Culture, Media and Sport (DCMS) on developing effective media to combat misinformation. A section of this media is specifically targeted at ethnic minorities to address a disparity in vaccine uptake between ethnic groups (Christie, 2021 ; GOV.UK, 2021).

2.5 Importance of Social Media: A Case Study of Vaccine Uptake in the UK

As proven with past social media responses to outbreaks in the United States (e.g., Zika virus in 2015 and 2016), misleading posts on social media often acquire more popularity than accurate posts (Sesagiri Raamkumar et al., 2020). The shrinking reliance on common news sources and growing social media usage among populations allows these misinformation outbursts to gain traction with unsettled and frightened citizens. One of the most significant examples of misinformation is the role that social media played in vaccine hesitancy within the United Kingdom.

The inverse relationship between growing social media usage and shrinking reliance on common news sources provided an easy outlet for coronavirus vaccine misinformation and conspiracy mentalities. Users on social media can create posts with any information they wish. Platforms such as Facebook and Twitter saw most of this unmonitored activity, with recent anti-vaccination movements expanding across YouTube, Instagram, and messaging services (e.g., WhatsApp) (Chadwick et al.,

2021). The scope and infestation of this movement promotes vaccine hesitancy, which has proven to be an obstacle for the UK and for London specifically. In data collected in late 2020, 17% of the UK adult population were very unsure about receiving a coronavirus vaccine, and a further 12% were strongly hesitant (Freeman et al., 2020).

Even more troubling data comes from a study of social media use related to vaccine hesitancy. Of the UK adult population, roughly 10% plan on using social media or messaging apps to discourage others from getting vaccinated. A further 40% say they intend to neither encourage or discourage vaccination, and another 18% respond with indifference, or "don't know" (Chadwick et al., 2021). Despite 33% saying they will encourage vaccination on social media, ambivalence is the most widespread response to vaccination promotion (about 57%) (Chadwick et al., 2021). This ambivalence suggests that vaccine misinformation has direct harmful implications on uninformed audiences.

2.6 COVID-19 in the United Kingdom

COVID-19 originated in Wuhan, China in December of 2019 as an "acute atypical respiratory disease" and spread rapidly across the globe (Yuki et al., 2020). The World Health Organization declared a COVID-19 pandemic on 12 March 2020, and since then, it has cost global governments high tolls socially and economically (Ciotti et al., 2020). Globally, there have been 521,920,560 cumulative cases, and 6,274,323 cumulative deaths as of 20 May 2022 (World Health Organization, n.d.). The United Kingdom first saw COVID-19 within its borders in January of 2020 (Flynn et al., 2020), and has had over 21 million confirmed cases with over 165,000 deaths since the start of the pandemic (World Health Organization, n.d.). Each new wave brought new challenges to local and national governments in how to rapidly control spread while protecting citizens.

In the following sections, we outline how the UK government responded to the COVID-19 pandemic and introduce the London Borough of Hounslow, with whom we conducted our project.

2.7 The United Kingdom's COVID-19 Response

Before the COVID-19 outbreak, almost all of the UK's pandemic public services oriented around influenza, commonly known as the flu (Haddon, 2021). This outdated infrastructure meant that governments had to implement new policy at breakneck speed while working hand-in-hand with scientific developments. COVID-19's unknown factors like the rate and pathways of contagion,

treatment options, and slow vaccine development created further obstacles for policymakers (Institute for Government Analysis, 2021).

The first 100 days of the United Kingdom's response were critical in outlining both the victories and failures of the NHS and government. The government's first strategy, in January 2020, was to contain the virus through tracing infected contacts, setting up quarantine spaces for people returning from China, and advising people to wash their hands. However, on 3 March 2020, Boris Johnson laid out a new government plan following the keywords: "contain", "delay", "research", and "mitigate" (BBC News, 2020). The initial phase, "contain," focused on detecting early cases and following close contacts to limit spikes in infections. The second phase, "delay," concentrated on slowing the virus' spread and pushing spikes in infections away from the UK's winter season (when scientists predicted the spread would be worse). The "research" phase sought to better understand the coronavirus and determine steps forward that would lessen its effects on both public health and the economy. Finally, the "mitigate" phase aimed to support the UK's public health resources and provide optimal care for those who became infected (GOV.UK, 2020). To support this four-phased action plan, Chancellor Rishi Sunak announced on 11 March that £12 billion would be budgeted for the coronavirus fund. Six days later, that budget was increased to £350 billion.

By 23 March 2020, Boris Johnson announced the first national lockdown, closing a majority of stores and businesses, and the government started to develop, refine, and implement supportive policies that created an effective safety net for UK citizens (Haddon, 2021). These policies include a work from home initiative driven by the Treasury's furlough scheme. This scheme protected millions of jobs across the UK and offered billions of dollars to aid the network of self-employed individuals (HM Treasury & Sunak, 2020). Despite the official lockdown, the UK passed its first 10,000 deaths on 12 April 2020, its first 20,000 deaths on 25 April 2020, and its first 30,000 deaths by 6 May 2020 (BBC News, 2020 ; Johnson, 2020). From COVID-19's emergence in March 2020 to the most recent lifting of restrictions in 2021, the UK weaved in and out of three national lockdowns.

Beginning in late-February 2021, the UK slowly began to reopen its economy, infrastructure, and community. The rapid expansion and rollout of vaccine infrastructure in early 2021 accelerated this process further (DHSC et al., 2021). As of 25 March 2022, the United Kingdom has a low stringency level in their response. There are no limitations surrounding isolation and quarantine restrictions, public

transport, or gathering size. Tests are available for anyone symptomatic, and contract tracing is now limited. Public policy still requires facial coverings in all public spaces (University of Oxford, n.d.).

Through the course of COVID-19 policy decisions, the United Kingdom's government repeatedly stated they were "following the science," (Sasse et al., 2020) though many in the public wondered who "the science" was. SAGE, or The Scientific Advisory Group for Emergencies, is the scientific committee advising the British Government on its policies (Haddon, 2021). Introduced in January of 2020, further subgroups within its operation informed the committee on items such as behavioral science and emerging viruses (McKee et al., 2022). SAGE was repeatedly criticized for its lack of transparency surrounding its organization. It remedied this lack of transparency by uploading its entire history of meeting minutes and discussion papers to its official website (Freedman, 2020).

2.8 The United Kingdom's Vaccine Delivery

The government's Vaccine Taskforce (VTF) started preparing for a COVID-19 vaccine in April of 2020, and it oversaw the portfolio of vaccines funded and deployed by the UK government. The United Kingdom was the first country in the world to authorize a COVID-19 vaccine, and by the end of January 2021, over 2 million UK citizens were vaccinated (GOV.UK, 2021a). The UK Vaccine Delivery Plan's four key parts were "supply," "prioritization," "places," and "people" (GOV.UK, 2021a).

By the beginning of the first phase, "supply", the UK had secured roughly 367 million doses from various vaccine developers (GOV.UK, 2021a). The second phase, "prioritization", outlined the order of priority groups eligible for these vaccine rollouts. The third phase, "places", detailed the government's types of vaccination sites, and how each would benefit the community. Sites ranged from football stadiums to hospitals to local businesses. The delivery strategy also included plans for mobile vaccination units to serve rural areas of the UK (GOV.UK, 2021a). The final stage, "people", outlined the government's 80,000 recruits for vaccine deployment (GOV.UK, 2021a). See Table 2.1 for a tabular view of all vaccines offered at the initiation of the UK Vaccine Delivery Plan.

Table 2.1: Overview of vaccine portfolio released by UK Government within their official vaccine delivery plan

Vaccine Type	Vaccine	No of Doses	Status
Adenovirus	Oxford/AstraZeneca	100 million	Approved and in deployment
Adenovirus	Janssen	30 million	Phase 3 trials
mRNA	Pfizer/BioNTech	40 million	Approved and in deployment
mRNA	Moderna	17 million	Approved
Protein Adjuvant	GlaxoSmithKline/Sanofi Pasteur	60 million	Phase ½ trials
Protein Adjuvant	Novavax	60 million	Phase 3 trials
Inactivated whole virus	Valneva	60 million	Phase ½ trials

2.9 Successes and Shortcomings of the United Kingdom's Response

Social science, public policy, and health scholars have discussed the following aspects of the United Kingdom's COVID-19 response as either successes or shortcomings in the overall response timeline. Those scholars agree the following successful initiatives had more benefits than harm in delaying, containing, researching, and mitigating coronavirus spread. Similarly, they agree that the following shortcomings in UK response hindered a successful containment of COVID-19.

The UK Government had some early successes in its economic approach to COVID-19 mitigation and its rapid initiation of strict economic policies. Even from as early as mid-March 2020, ministers within the government took on a monetary "whatever it takes" mentality (HM Treasury & Sunak, 2020). Chancellor Sunak's early adjustment of the coronavirus fund budget (from £12 billion to £350 billion) proved instrumental in a fast ramp up of the government's response (BBC News, 2020). Many scholars agree that this strong financial backing helped the government jumpstart its development of the pandemic infrastructure that proved vital in the following years (Paton, 2022).

The UK government was also proactive in establishing welfare policies. Within a 48-hour period in late March 2020, policymakers developed a series of socially-centered programs, the most significant being The Coronavirus Jobs Retention Scheme (CJRS) (Haddon, 2021 ; Hick & Murphy, 2020).

Commonly called the "furlough" scheme, the CJRS was the UK's strategy for supporting wage compensation for those either laid off or placed on furlough (Hick & Murphy, 2020).

Conversely, one common critique of the government's response is of its slow move to restrict flights arriving from infection hotspots and the lack of requirements for quarantining upon arrival (Paton, 2022). A further notable criticism is in the deficiency of a test and trace policy. The UK test and trace policy took months to develop, missing the crucial initial months in coronavirus' spread. The government did not direct testing distribution strategically, so testing was administered almost randomly. This oversight meant that the data did little to illuminate where and how COVID-19 was spreading. Additionally, the entire system relied on private companies with previously unskilled staff (Haddon, 2021).

A final prominent issue in the UK response lies in the winding timeline of moving in and out of lockdowns. Between March 2020 and 2022, the Prime Minister led the United Kingdom through three separate lockdowns, with a matter of months in between (Institute for Government Analysis, 2021). Boris Johnson ended some lockdowns before the country had met previously-imposed criteria and communicated some policy changes vaguely, complexly, or belatedly (Paton, 2022). Community-written pieces published in local newspapers and blogs reflected a frustration with inconsistent decision-making and a government seemingly unable to learn from mistakes (Haddon, 2021).

2.10 London Borough of Hounslow

Hounslow is located in west London, and is one of the most diverse boroughs. The borough contains vast green space and historic landmarks, such as Chiswick House, Hogarth's House, and Osterley Park. Hounslow's population is mostly composed of white, Asian, and black communities, with roughly half of people living in Hounslow being born in England (City Population, n.d.). The top countries of origin for Hounslow residents after England are India, Pakistan, and Kenya (QPZM LocalStats UK, 2022). The majority of citizens speak English, but almost 200 languages are spoken in Hounslow (London Borough of Hounslow, 2022). Additionally, religious diversity is a big component of Hounslow's cultural character. Less than half of the population are Christian, and a small group of the population are secular.

The economy of Hounslow heavily relies on Heathrow airport. Due to the COVID-19 pandemic, Hounslow's economy declined rapidly relative to other boroughs of London. As a result of the

widespread restrictions on travel and quarantine requirements, the airport's loss of revenue cost the borough over $800 million combined over the years of 2020 and 2021 (Oxford Economics & London Borough of Hounslow, 2020). With the pandemic still in effect in the United Kingdom, the airport continues to be less populated than in a non-pandemic year. The borough expects to lose hundreds of millions of dollars more throughout 2022 due to this decrease in travel. The government has implemented policies in the past to aid the Hounslow borough in their economic affairs, and the economy of Hounslow has fluctuated. Additionally, both Heathrow airport and its airlines laid off a high volume of employees due to the pandemic, causing the unemployment rate to increase. By July 2020, 38% of Hounslow's workforce was furloughed (LBH, n.d.).

2.11 The Hounslow Resilience and Contingency Planning Team

The Hounslow Resilience and Contingency Planning Team works within the London Borough of Hounslow (or Hounslow Council) and is responsible for assessing risk, emergency planning, business continuity planning, emergency response, and information sharing in Hounslow (Carey, n.d.). They work in tandem with other outreach teams within the LBH to plan and implement policies for a variety of emergencies, including but not limited to pandemics. During the COVID-19 pandemic, the HRCPT was responsible for determining the areas in Hounslow that are at a higher COVID-19 risk and working with the LBH to implement policies to reduce the harm to those areas.

With widespread availability of vaccines, positive COVID-19 rates in Hounslow are slowing down, with the peak in early January 2022 of 894 cases in a 7-day average dropping to only 227 cases in a 7 day average as of 27 March 2022 as seen in Figure 2.1 (GOV.UK, n.d.-a). Due to these falling positive COVID-19 rates, the London Borough of Hounslow is moving from the response phase to the recovery phase.

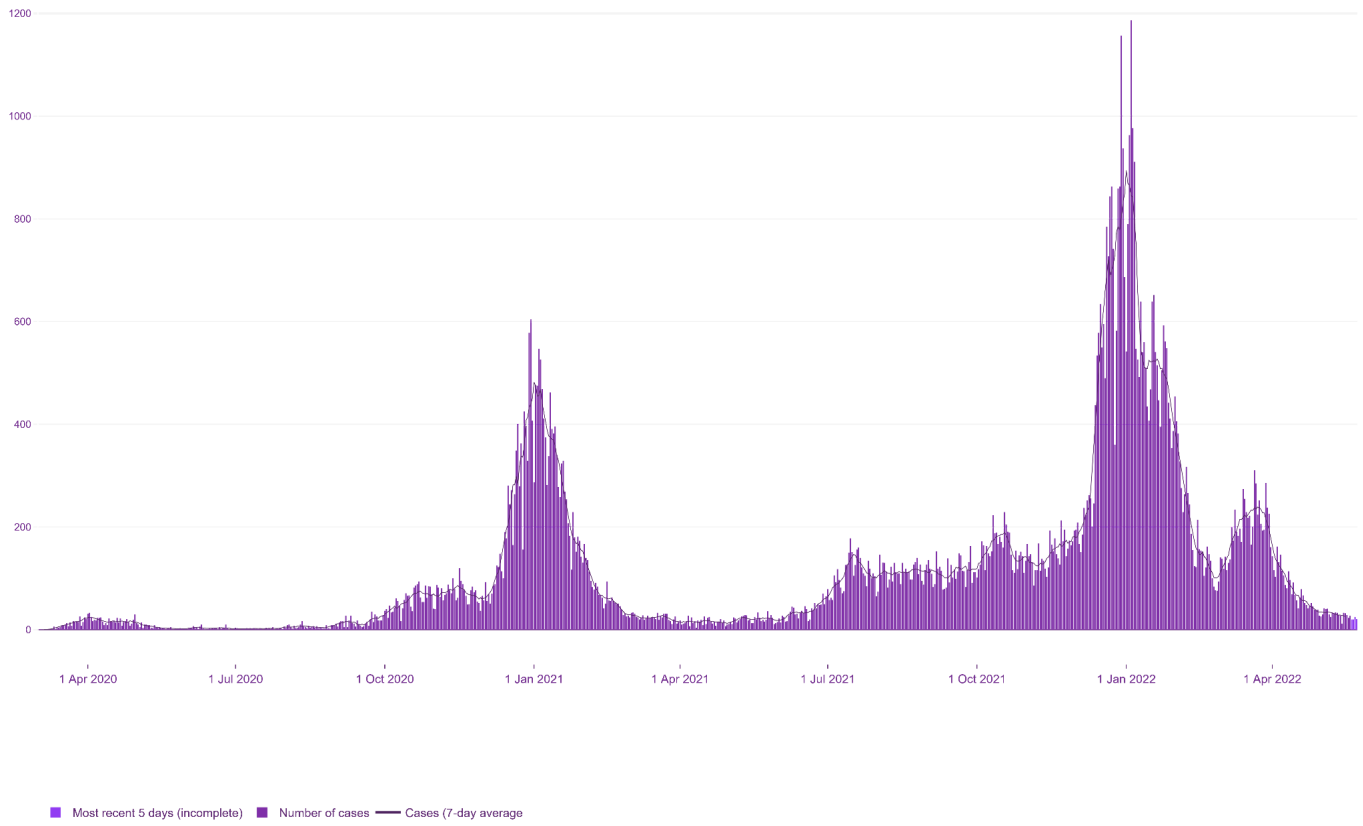


Figure 2.1: This graph shows the number of COVID-19 cases per day and a seven-day rolling average of cases per day in Hounslow between April 2020 and May 2022.

The LBH pandemic response had many facets, including creating a community hub to support vulnerable residents, increasing home visits, increasing distribution of PPE items to care providers, distributing financial support to Hounslow residents and businesses, redesigning public spaces and parks to keep people safe and active, providing higher London Living Wage to care workers, and creating regional testing sites and mobile testing centers (Curran, 2020). These initiates were all done on top of the baseline policies for distancing, closures, and mask usage required by the UK government and City of London. Along with their response efforts, the LBH also drafted a plan for the future, which includes improving business resilience and reducing socio-economic inequality. In order to create a holistic plan for recovery from COVID-19 and for future pandemic responses, the LBH wants to understand the public's sentiments around their past COVID-19 initiatives so that future initiatives can see even better community adherence and engagement.

3.0: Methods

Our research goal was to identify and analyze key themes in the Hounslow public's perception of the London Borough of Hounslow (LBH) COVID-19 response. To achieve this goal, we developed two supporting objectives:

1. *To develop timelines of the LBH COVID-19 response to compare to the UK response*
2. *To explore and report public sentiments concerning LBH policies regarding closures, distancing, PPE, testing, and vaccines.*

To meet our objectives, we compiled the data we collected in surveys to identify relationships between socio-demographic factors and themes in public perception. In this chapter, we describe the methods we developed to achieve these objectives. See Figure 3.1 for a roadmap of our methods plan.

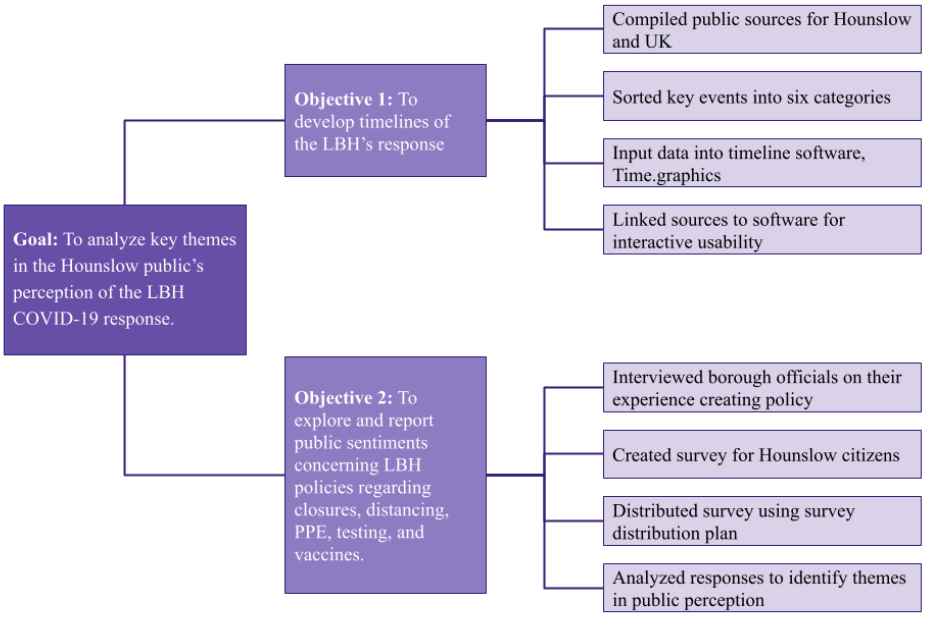


Figure 3.1: This figure portrays a roadmap of our methods plan, including our goal, objectives, and supplementary methods

3.1 Objective 1: Timelines of the LBH COVID-19 Response

After conversing with HRCPT members to collect contextual information for our survey, we predicted that most residents would not fully remember the policies and initiatives from each stage of the pandemic response. Even the HRCPT did not fully remember their earlier policies. This consideration reflects literature finding that most of the general public does not pay close attention to their local politics, including pandemic response (Berinsky, 2017). These observations led our team to create a comprehensive, interactive timeline of the LBH COVID-19 response.

In order to distinguish the LBH and national policies, we created a holistic timeline of the LBH local and UK national COVID-19 responses. Our goal with this timeline was to understand what specifically the LBH did and how it differed from or coincided with national policy and communicate these differences to the LBH. The timeline spans from the first COVID-19 case in the UK to May 2022, and covers all policies, initiatives, and outreach implemented by the LBH, as well as major policies and initiatives of the UK response. We grouped Hounslow and UK initiatives on the timeline into five buckets: closures, distancing, PPE, testing, and vaccines. This grouping enabled us to explore public sentiments on specific facets of the response. We also developed a graphical timeline of only the LBH response compared to local case numbers.

We compiled both timelines from a variety of publicly available sources including BBC and the Borough of Hounslow website (see Appendix A for the timeline dates and references). We referenced a literature review of dates for the national UK response and a government blog of Hounslow response initiatives. We used a total of 80 sources for 139 events, with the literature review and the Hounslow government blog being our major sources. Using the Time.graphics program, we merged the local and national timelines into one that juxtaposes the programs of each. The final timeline displays the UK response above the shared date line and the LBH response below. We coded each event by color and a tagging system corresponding to the five event buckets of closures, distancing, PPE, testing, and vaccines, as well as major COVID-19 milestones. Users can sort policies on the timeline to compare national and local responses and learn more about key policies. Our student team presented the final timeline to the LBH and made it available to the borough to distribute to citizens, allowing the HRCPT to identify discrepancies between public perception and actual policies. The Hounslow response timeline follows a similar structure of color-coded events, but is not interactive.

3.2 Objective 2: Exploring Public Sentiments Towards LBH Closures, Distancing, PPE, Testing, and Vaccine Policies

To explore public sentiments, a large sample size is important for many reasons including ensuring a general population representation and limiting arbitrary biases. A sample size that is too small can significantly limit the conclusions that one can draw based on the data. Those concerned with the results may consider conclusions drawn based on a small representation to be arbitrary as not justifiable as a comprehensive analysis (Faber & Fonseca, 2014). This issue of volume is why we emphasized surveys for data collection rather than focus groups. In addition to data volume, limiting biases is vital to ensure clear and comprehensive data analysis. Multiple-choice surveys of public perceptions streamline and categorize results, as there are set answers for respondents to choose from (Dowler et al., 2006).

We gathered context on the LBH COVID-19 response by conducting a semi-structured group interview with five members of the HRCPT in the Hounslow House. We structured this 30-minute interview with prompted questions and time for participants to elaborate. Our team then asked follow-up questions based on their responses. From this interview, we gathered insight into the members' experiences with responding to the emerging pandemic and reflections on how they would approach future pandemic policies. We used these conversations as a foundation for developing survey questions for the public. See Appendix B for the semi-structured questions we asked the HRCPT.

The multi-part survey we distributed to the Hounslow public began with a statement of informed consent, which briefly outlined our project, our reason for collecting survey responses, and the participant's option to opt out at any time. The survey then asked for demographic information such as gender, age, employment, most common transportation methods, and residential location to serve our research questions. The core of the survey consisted of yes or no, ranked 1-5, and free response questions focusing on general COVID-19 measures, and Hounslow-specific COVID-19 initiatives (see Appendix C for the statement of informed consent and a list of survey questions). From these surveys, we developed a holistic understanding of the public's perceptions and experiences with Hounslow initiatives from those who experienced the policies.

Our distribution plan involved handing out flyers to individuals and businesses. Our team began distribution by splitting into two pairs of researchers and distributing physical flyers with the QR code and title "What do you think about Hounslow's COVID-19 Response?" (see Appendix D for flyer layouts). We distributed the flyers in dense locations including Hounslow Central, Chiswick, and

Feltham. We also distributed flyers to local businesses and individuals in common spaces. Most businesses were willing to hang our flyers on their community bulletin boards or shop windows. Our team also handed out flyers in crowded areas like shopping centers, parks, and central streets. Within the first two days of survey distribution, we distributed over 50 posters to businesses and 250 flyers to individuals in the Hounslow community.

We distributed our QR-code surveys through volunteer-nonprobability sampling, which relies on people consciously choosing to take the survey. This method meant that we had little control over our sample of participants (Vehovar et al., 2016). Although volunteer sampling tends to draw respondents that have stronger viewpoints on survey topics, participants are likely to comply with the full length of the interview once they begin (Kaye & Johnson, 1999). This compliance meant that, although we could expect to see more respondents with stronger viewpoints on some aspects of the LBH response, we could also expect respondents to finish the survey, even if they did not have strong viewpoints on all of the response aspects. While probability sampling allows for more rigorous and accurate data analysis, nonprobability sampling is typical of surveys with limited time or budget (Henry, 1990).

We also administered surveys in-person to local residents using convenience-nonprobability sampling. Convenience-nonprobability surveying allows researchers to survey participants that are conveniently available to them (Skowronek & Duerr, 2009). We chose this sampling structure because of our limited time and resources. We again split into two pairs and went out into a variety of Hounslow community leisure areas including shopping centers, public markets, and parks to ask residents to take a short survey for our independent study. We observed much higher response rates using this strategy than we did from handing out fliers and hanging posters (62 in-person survey participants versus 8 QR-code participants). We administered the survey in-person for one week due to time constraints. Additionally, our team surveyed a majority of participants during traditional working hours. Due to the timeframe, many of our respondents were retired or unemployed.

To give our data analysis initial direction, our team formed a list of predicted themes before beginning the surveying process. These hypotheses are based in literature regarding socio-demographic factors and COVID-19 environments. See Table 3.1 for a list of our team's predicted themes.

Table 3.1: Predicted Themes and Reasoning

#	Predicted Theme	Comparison	Reasoning
1	People who primarily walked or used public transport perceived that they had less access to resources	Mode of transportation vs. accessibility	People without cars may have been unable to access resources further away from them as quickly or easily as people with cars (e.g., testing, PPE) (Jiao et al., 2022)
2	Wards closer to the airport perceived that they had better access to resources	Ward vs. accessibility	Pandemic infrastructure in Hounslow may have been focused around the airport to reduce the probability of an outbreak (Coelho et al., 2020)
3	People from wards that reported being "very healthy" have higher vaccination rates (Nomin Census, 2011)	Ward vs. vaccination rate	Healthy citizens might have higher understanding of vaccination benefits, and therefore higher vaccine uptake (Giuliani et al., 2021)
4	Younger people (18-25) perceived that policies were communicated more effectively by the London Borough of Hounslow	Age vs. communication	Younger people may have more experience using technology and higher media literacy (Bishop, 2020)
5	Middle-age people (36-65) perceived that the Hounslow Shop Local initiative was more beneficial	Age vs. Shop Local initiative	Citizens who shop for their family units might have taken advantage of the shopping initiatives more (Bedford, n.d.)
6	Middle-age people (36-65) perceived the outdoor spaces to be more beneficial	Age vs. outdoor space initiative	People with young children or those who walk for exercise are more likely to use the outdoor spaces (Sullivan & Gershuny, 2021)
7	Younger people (18-35) did not perceive social distancing to be as effective as older people did	Age vs. effectiveness of social distancing	Younger people may have more of an emotional reaction toward social distancing because they had to miss major life milestones (Reniers, n.d.)

3.3 Limitations of Our Methods

We encountered two main limitations in our methods process. The first in the sensitivity of the resources sent to us by the LBH for our timelines and the second in the small unrepresentative sample collected.

Working in collaboration with the local government meant that many of the LBH's documents contained sensitive information that could not be published in any capacity. We were unable to use sensitive government information in our final timeline and paper, so we sourced publicly-available

information to ensure the timeline could be publicly accessed and utilized. Initially, our team compiled a table of timeline events using the sensitive government-issued sources (see Appendix A for the table of timeline dates and events). We then researched the individual dates and found publicly-accessible sources to cite and support the information. Our team used information from credible public sources like BBC and My Week by Councilor Steve Curran. BBC is a British public broadcaster that informs the citizens of the UK (*About the BBC*, n.d.). Similarly, My Week is a weekly newsletter sent virtually to the Hounslow community updating the citizens of local news, policies, and regulations. A majority of the COVID-19 regulations implemented in Hounslow were outlined in this weekly newsletter. However, BBC and My Week might have provided less detail than some of the sensitive government documents.

Additionally, we collected a small and unrepresentative sample size. Limitations in where we were allowed to distribute our survey led our team to reach only a small portion of the population that was highly concentrated in unemployed and retired people. Another factor contributing to our unrepresentative sample size was Hounslow's language diversity. As referenced in our literature review, almost 200 languages are documented and spoken in the Hounslow borough, and a large portion of the community does not speak English. In attempting to distribute surveys both with flyers and in-person administration, we encountered many citizens who were unable to participate due to language barriers. Because of this, our distribution was limited to English-speaking Hounslow residents.

4.0: Results & Analysis

In this section, we outline our findings by objective, discuss how our findings explore the Hounslow public's perception of the LBH COVID-19 response, and explain how our results answer our three research questions:

1. *What was the LBH response to the pandemic and how is it distinct from the UK response?*
2. *What are themes in the public's perceptions of the LBH policies concerning closures, distancing, PPE, testing, and vaccines?*
3. *Do socio-demographic differences factor into different perceptions concerning the LBH response?*

In order to assess the LBH COVID-19 response, we created a set of comprehensive timelines and a survey to administer to the Hounslow public. These two methods allowed us to preliminarily understand how public perception in the Hounslow public relates to the actual policy and resources available to them. We started our assessment of the LBH COVID-19 response by creating a set of policy timelines. The first timeline is a comprehensive, interactive, day-to-day report of COVID-19 regulations from both the UK government and the LBH, spanning from mid-March of 2020 to mid-April 2022. Users interacting with the timeline can see everything that the UK national government and the local LBH implemented during the COVID-19 pandemic in one place. In the coming months, the HRCPT will use the timeline to evaluate the effectiveness of their COVID-19 response. The second timeline is a graphic showing Hounslow-specific initiatives and policies. A graph showing COVID-19 cases in Hounslow accompanies this timeline to compare how policies may have affected case numbers. In analyzing our survey results, we found that the public was generally satisfied with LBH COVID-19 initiatives. On average, respondents found closures, social distancing guidance, and mask regulations to be at least somewhat effective, and PPE, testing, and vaccines to be accessible.

To analyze our quantitative data, we related our average response values to the corresponding description (from Very Inaccessible to Very Accessible). For instance, in questions regarding accessibility, 1 was Very Inaccessible, 2 was Inaccessible, 3 was Unsure, 4 was Accessible, and 5 was Very Accessible. In the case of coding unsure averages, we rounded averages between 3.5 and 3.9 to be Accessible, and averages between 3.0 and 3.4 to be Unsure.

4.1 Objective 1: Timelines of the LBH COVID-19 Response

By comparing both timelines with COVID-19 wave data and case numbers, we observed how the LBH response paralleled, supplemented, and reinforced national response. We observed that in wave one, spanning roughly March to July 2020, the LBH policies mostly included closures and distancing efforts, with the introduction of drive-through testing programs. Most policies at the beginning of the first wave outlined mandatory closures, while those at the end of the wave encouraged social distancing and instated testing protocols. In response to wave two, which spanned roughly September 2020 to May 2021, the LBH initiatives promoted closures, ramped up testing programs, and emphasized the importance of vaccination. Finally, in their response to wave three, spanning roughly June 2021 to May 2022, the LBH kept testing availability high and focused heavily on vaccine promotion and distribution. Overall, the LBH response mostly revolved around testing and vaccine access. We compared this observation with our survey questions regarding test and vaccine accessibility, and found that survey respondents perceived access to these resources to be high. We discuss findings from our survey responses in depth below.

The comprehensive timelines allowed both our student team and the HRCPT to fully understand and evaluate LBH policies. The timelines will directly benefit the LBH COVID-19 response evaluation framework, which the borough will use to find shortcomings and successes in its pandemic response and improve its future pandemic response. The staff will also use the timelines to provide context and set meeting agendas for the upcoming response debriefing meetings held within the department. By comparing the timelines of initiatives and COVID-19 cases in the borough, COVID-19 milestones, and restriction information, the LBH can more effectively assess their response internally. See Appendix E for both final timelines.

4.2 Objective 2: Exploring Public Sentiments Toward LBH Closures, Distancing, PPE, Testing, and Vaccine Policies

In analyzing our survey data, we identified relationships among demographics, perceived effectiveness of restrictions, resource accessibility, and knowledge of LBH initiatives. Based on our second and third research questions, we identified overarching themes present in the sample and themes specific to certain demographic groups from our data. Each group of findings reflects themes in perceived effectiveness, resource accessibility, and benefit of LBH initiatives. See Appendix F for all

average survey data. More specifically, see Table 4.1 for a summary of data supporting overall themes and Table 4.2 for a summary of data supporting socio-demographic themes.

Table 4.1: Data from survey supporting overall themes

SUMMARY OF QUESTION	SUB BUCKET	TYPE	AVG.	% of Yes
Workplace Closure Effective?	Effectiveness	1-5	**3.73**	59%
Store Closure Effective?	Effectiveness	1-5	**3.81**	62%
School Closure Effective?	Effectiveness	1-5	**3.52**	51%
Social Distancing Effective?	Effectiveness	1-5	**3.72**	
Mask Regulations Effective?	Effectiveness	1-5	**3.86**	
PPE Accessible?	Accessibility	1-5	**4.12**	
Testing Accessible?	Accessibility	1-5	**4.41**	
Vaccines Accessible?	Accessibility	1-5	**4.54**	
Vaccinated?		Yes/No		**90%**
LBH Communication Effective? (Yes)		Yes/No		**61%**
LBH Communication Effective? (Yes/Somewhat)		Yes/No/Somewhat		**91%**
Shop Local?		Yes/No		**52%**
Shop Local Benefit?	Benefit	1-5	**3.17**	26%
Outdoor Spaces?		Yes/No		**43%**
Outdoor Spaces Benefit?	Benefit	1-5	**3.83**	32%
Community Testing Centers?		Yes/No		**83%**
Testing Centers Benefit?	Benefit	1-5	**3.54**	52%
Stepping Up For Hounslow?		Yes/No		**39%**
Stepping Up Benefit?	Benefit	1-5	**3.86**	30%
Vaccine Bus?		Yes/No		**49%**
Vaccine Bus Benefit?	Benefit	1-5	**2.94**	22%

Averages from all survey participants inform the following overarching findings:

1. **Respondents believed that the LBH COVID-19 restrictions were implemented too slowly.** Qualitative data that we collected while surveying supports this claim. Many survey participants believe that the LBH implemented policies were less effective in slowing the spread of COVID-19 than they could have been if implemented sooner. In section 2.9 of our literature review, we discuss the shortcomings in the United Kingdom's COVID-19 response. One notable

shortcoming scholars observed was the slow rollout of COVID-19 restriction policies. This shortcoming was notable in Hounslow, as survey responses reflected this sentiment.

2. **61% of respondents thought LBH communication regarding COVID-19 regulations was effective.**

   Of possible responses of "Yes," "No," "Somewhat," or "I don't know," 61% of respondents claimed that "Yes," the LBH communication of its COVID-19 regulations was effective. Further, 91% of respondents answered "Yes" or "Somewhat," as seen in Table 4.1. Most respondents were pleased with the LBH communication strategies. However, our team found disparities in communication approval within demographic categories. We discuss these findings later in this section.

3. **Respondents perceived PPE, testing, and vaccines to be accessible.**

   Survey respondents perceived easy accessibility to PPE, testing, and vaccines in their borough. PPE, testing, and vaccines demonstrated perceived accessibility averages above 4 (PPE with 4.12, testing with 4.41, and vaccines with 4.54) out of a possible maximum of 5, representing "Accessible", as seen in table 4.1. Much of the LBH response to COVID-19's second and third waves focused on resource access, which translated into the community.

We also discovered several trends that did not represent larger themes, primarily relating to specific policies or initiatives:

First, respondents perceived school closures to be the least effective closure in slowing the spread of COVID-19. Out of all the closures implemented (workplace, stores, and schools), only 51% of respondents perceived school closures to be effective. In comparison, 59% of respondents perceived workplace closures to be effective (scored a 4 or 5 out of 5), and 62% of respondents perceived store closures to be effective.

Second, of the five Hounslow initiatives included in the survey (Shop Local, creation of outdoor spaces, free community testing centers, Stepping Up for Hounslow, and the vaccine bus), the fewest participants knew about the Stepping Up for Hounslow vaccine initiative. A significantly higher percentage of respondents knew about the other initiatives. While between 43% (creation of outdoor spaces) and 83% (community testing centers) of survey participants knew about other initiatives, only

39% knew of Stepping Up for Hounslow. Conversely, almost all survey participants knew about the LBH community testing centers (again, 83%). With a high awareness rate, testing centers were perceived to be beneficial (average perceived benefit of 3.54).

Finally, of the five Hounslow initiatives included, participants perceived Hounslow's vaccine bus to be the least beneficial. Of the five Hounslow initiatives that were included in the survey, only 22% of respondents perceived the vaccine bus to be beneficial (answering 4 or 5 out of 5). In comparison, 26% of respondents perceived the Shop Local initiative as beneficial, 32% of respondents perceived the outdoor spaces as beneficial, 52% of respondents perceived the free community testing centers as beneficial, and 30% of respondents perceived the Stepping up for Hounslow vaccine initiative as beneficial.

Table 4.2: Data from survey supporting socio-demographic themes

SUMMARY OF QUESTION	SUB BUCKET	TYPE	% of Yes	Female	Male	18-35	36-65	66+	Car	No Car
Gender?		M.C.		54%	46%					
Age?		M.C.				25%	51%	25%		
Travel?		Checkbox							49%	51%
Workplace Closure Effective?	Effectiveness	1-5	59%	3.75	3.70	3.94	3.50	4.00	3.73	3.73
Store Closure Effective?	Effectiveness	1-5	62%	3.92	3.68	4.06	3.41	4.35	3.85	3.76
School Closure Effective?	Effectiveness	1-5	51%	3.61	3.40	3.71	3.19	3.94	3.73	3.30
Social Distancing Effective?	Effectiveness	1-5		3.89	3.53	3.41	3.60	4.29	3.76	3.69
Mask Regulations Effective?	Effectiveness	1-5		4.00	3.69	3.59	3.66	4.53	4.15	3.57
PPE Accessible?	Accessibility	1-5		4.03	4.22	4.24	4.06	4.12	4.09	4.14
Testing Accessible?	Accessibility	1-5		4.16	4.69	4.47	4.40	4.35	4.35	4.46
Vaccines Accessible?	Accessibility	1-5		4.49	4.59	4.35	4.60	4.59	4.65	4.43
Vaccinated?		Yes/No	**90%**	89%	91%	76%	91%	100%	94%	86%
LBH Communication Effective? (Yes)		Yes/No	**61%**	59%	63%	50%	54%	76%	56%	66%
LBH Communication Effective? (Yes/Somewhat)		Yes/No/ Somewhat	**91%**	95%	88%	88%	89%	100%	94%	89%

Shop Local?		Yes/No	**52%**	62%	41%	29%	60%	59%	59%	46%
Shop Local Benefit?	Benefit	1-5	26%	3.17	3.15	3.60	3.10	3.10	3.30	3.00
Outdoor Spaces?		Yes/No	**43%**	46%	41%	65%	40%	29%	38%	49%
Outdoor Spaces Benefit?	Benefit	1-5	32%	3.53	4.23	3.27	4.36	3.60	4.15	3.59
Community Testing Centers?		Yes/No	**83%**	86%	78%	76%	89%	76%	82%	83%
Testing Centers Benefit?	Benefit	1-5	52%	3.25	3.92	4.00	3.45	3.31	3.75	3.34
Stepping Up For Hounslow?		Yes/No	**39%**	32%	47%	53%	34%	35%	41%	37%
Stepping Up Benefit?	Benefit	1-5	30%	3.54	4.13	4.00	3.85	3.67	3.71	4.00
Vaccine Bus?		Yes/No	**49%**	51%	47%	53%	54%	35%	44%	54%
Vaccine Bus Benefit?	Benefit	1-5	21%	2.50	3.50	3.67	2.82	2.17	2.53	3.29

The following findings are based on relationships between socio-demographic factors (age, employment, gender, transportation access):

1. **Respondents aged 66+ perceived the LBH communication of its policies to be more effective than younger age groups did**

   Pre-existing literature in institutional communication finds that younger audiences get more current events and policy information from online venues (Bishop, 2020). Because of this literature, our team predicted that younger people (age 18-24) would perceive that the London Borough of Hounslow communicated their policies more effectively (see Predicted Theme 4 in Table 3.1). Younger individuals may have higher media literacy than older individuals, so we predicted that communication through social media platforms and online forums would be better received by this demographic of young individuals (Bishop, 2020). This prediction was proven incorrect, as 76% of respondents aged 66+ perceived LBH communication to be effective, while only 59% of respondents aged 18-35 and 54% of respondents aged 36-65 perceived LBH communication to be effective.

2. **Perceived resource accessibility was not influenced by a respondent's most common mode of transportation**

Based on literature, our team predicted that people who primarily walk, bike, or use public transportation would perceive that PPE, testing, and vaccines to be less accessible (see Predicted Theme 1 in Table 3.1) (Jiao et al., 2022). This prediction was proven incorrect; respondents who walk, bike, or use public transportation perceived resources to be similarly accessible as the average respondent (average perceived accessibility for all initiatives of 4.36 for those who use cars, and 4.34 for those who do not).

3. **More female than male respondents were informed on LBH initiatives**

   We asked survey respondents if they knew about a series of Hounslow-specific initiatives. More women knew about all initiatives on our survey (with the exception of the Stepping Up for Hounslow initiative). As seen in Table 4.2 above, excluding Stepping Up for Hounslow, 5-22% more women knew about initiatives within the borough than men. Despite this difference in awareness, men tended to think that all initiatives were more beneficial, excepting Shop Local, which both groups found equally beneficial.

The themes we identified from our data varied substantially from our predicted themes. These findings go against the existing background literature on demographic and community behavior. As our sample size is not statistically significant, these outcomes might change once drawn from a larger more representative sample. However, Table 4.3 below shows our predicted themes and their preliminary outcomes.

Table 4.3: Predicted Themes and Preliminary Outcomes

#	Predicted Theme	Preliminary Outcome	Reasoning
1	People who primarily walked or used public transport perceived that they had less access to resources.	**Disproven**	There was no relationship between mode of transportation and perceived accessibility to resources.
2	Wards closer to the airport perceived that they had better access to resources.	**Insufficient Data**	We did not collect survey responses from citizens of every ward, so we cannot support any claims regarding themes observed across wards in comparison with the rest of the Hounslow wards.

3	People from wards that reported being "very healthy" have higher vaccination rates (Nomin Census, 2011).	**Insufficient Data**	We did not collect survey responses from citizens of every ward, so we cannot support any claims regarding themes observed across wards in comparison with the rest of the Hounslow wards.
4	Younger people (18-24) perceived that policies were communicated more effectively by the London Borough of Hounslow.	**Disproven**	People age 66+ perceived that policies were communicated more effectively by the London Borough of Hounslow.
5	Middle-age people (35-64) perceived that the Hounslow Shop Local initiative was more beneficial.	**Disproven**	People age 66+ perceived that the Hounslow Shop Local initiative was more beneficial.
6	Middle-age people (35-64) perceived the outdoor spaces to be more beneficial.	**Disproven**	People age 18-35 perceived the outdoor spaces to be more beneficial.
7	Younger people (18-35) did not perceive social distancing to be effective.	**Proven**	Younger people, on average, responded that they were unsure of the effectiveness of social distancing and therefore did not perceive social distancing to be effective. There was not, however, a large difference between young and middle aged people's perceived effectiveness (3.41 vs 3.60, respectively).

Notably, our sample size consisted of 70 respondents, representing 0.03% of the Hounslow public age 18+. Further, a large portion of the Hounslow community does not speak English, meaning we were limited to gathering responses from only English-speaking residents. Another demographic challenge we faced was the physical size of Hounslow and collecting a representative distribution across geographic areas. We focused our distribution in areas of Hounslow near public transportation stops because public transportation was our most accessible method of travel. See Appendix G for maps of distribution sites and respondent residences.

5.0 Conclusions

The purpose of our project was to analyze key themes in the LBH response to the COVID-19 pandemic and the Hounslow public's perception of the LBH COVID-19 response. The LBH wants to understand these perceptions in order to create a recovery plan that improves policy adherence and community engagement.

In this chapter, we summarize our major findings and how they informed our recommendations for the London Borough of Hounslow. We based the key findings and subsequent recommendations, outlined below, on both the context the timelines provided and the provisional survey data we gathered from Hounslow residents. We make these recommendations with the goal of improving communication, effectiveness of, and adherence to future risk responses.

5.1 Summary of Key Findings

By analyzing the timelines of LBH and the UK responses, we identified relationships between the local and national responses and explored how they relate to each other. At the beginning of the pandemic, LBH policies mirrored those of the national policies, but as the pandemic progressed, the LBH response concentrated more on resource access. We determined that LBH policies mostly included closures and distancing efforts in wave one, ramped up testing and vaccination in wave two, and raised testing and vaccine availability in wave three. Overall, the LBH response mostly revolved around testing and vaccine access. This paralleled survey respondents' perceptions that PPE, testing, and vaccines were accessible.

Based on our survey responses, we identified preliminary themes regarding respondents' perceived effectiveness, accessibility, and benefit of LBH regulations and initiatives. We then grouped these findings into overarching themes and themes observed in specific demographics. For an in-depth discussion of these findings, refer to section 4.0 detailing our Results and Analysis.

Our first overarching theme was that respondents believed that the LBH implemented COVID-19 restrictions too slowly. We noted that unprompted, many participants elaborated on why they thought certain initiatives were effective or ineffective. A notable number of these responses mentioned that regulations were put in place too slowly. Individuals also noted delays in COVID-19 test distribution, leading to the virus' unmonitored spread. Second, 61% of respondents thought LBH

communication regarding COVID-19 regulations was effective, and 91% of respondents believed that it was at least somewhat effective. This majority reflects a generally positive perception of the LBH's communication in the pandemic environment. Finally, Hounslow residents perceived PPE, testing, and vaccines to be accessible. Our data shows that PPE, testing, and vaccines all had an average perceived accessibility of more than 4 (with 5 being very accessible).

Respondents older than 65 perceived the LBH's communication of its policies to be more effective than those 65 and under. 76% of respondents over 65 perceived the LBH's communication of COVID-19 regulations to be effective, with 100% saying that it was at least somewhat effective. Comparatively, 56% of respondents 65 and under perceived the LBH's communication of COVID-19 regulations as effective, with 88% saying that it was at least somewhat effective.

Finally, we found a respondent's most common mode of transportation had no influence on their perceived resource accessibility. Our results showed that people who primarily walk, bike, or use public transportation perceive the resources to be as accessible as the average perceived accessibility.

5.2 Recommendations

Based on our findings, we recommend the LBH collect more survey responses and make adjustments to borough communications.

1. **We recommend the LBH distribute a borough-wide survey and include LBH branding to increase sample size.**

   Our survey findings represent 0.03% of the Hounslow population that is 18 years and older. This data set is not a representative sample, and the borough needs a much larger sample size (0.19%) to significantly analyze the public's perception of the COVID-19 response. We calculated this sample with a 95% confidence level, a 5% margin of error, and a population size of 205,994, representing those in the borough over 18 years old (Qualtrics, n.d.). In section 3.2, we discuss the importance of a large sample size to eliminate unjustified conclusions and potential biases. A survey of the required scope was not possible under our conditions but the LBH can obtain this data with more time and resources.

   We recommend that the borough conduct a follow-up survey with a larger scope that includes LBH branding to improve engagement and credibility. Potential options for further survey

distribution include mail-drops, social media polls, email surveys, in-person interviews, telephone surveys, focus groups, and outsourcing to independent firms. See Table 5.1 for details regarding potential survey options for the LBH to consider.

Because of the pros and cons concerning these distribution methods, we further recommend that the LBH collaborate closely with community groups to distribute surveys (such as Community Champions, Friends of Faith, and Ealing CVS), as these groups may improve engagement within their respective communities.

Table 5.1: Potential Further Survey Distribution Methods

Survey Method	Pros	Cons
Mail drop	The LBH has experience conducting mail drop surveys and has seen success in past response rates.	Considering the financial factor, this survey method may cause a large financial burden. Sending a generic postal survey through mail to every resident over 18 years old would cost roughly £5000 (Sinclair et al., 2012). Additionally, this survey method spans a longer time period.
Social media polls	This survey method may reach a younger audience.	This survey method may not reach an older audience.
Email survey	There will be wider outreach through email surveys than social media polls.	The LBH would need to obtain the emails of every Hounslow resident.
In-person interviews	Our team observed a higher response rate while in-person surveying than in online versions of the survey. These surveys provide direct responses from participants.	This method is more time consuming and requires an appreciable dedication of resources.
Telephone survey	These surveys are time efficient as the callers can hang up and quickly move on if respondents do not answer. Also, these surveys provide direct responses similar to in-person interviews. Finally, telephone surveys can be conducted remotely rather than going out into the community to find respondents.	Telephone surveys have seen declining response rates since the 1980s, as people may be less likely to answer a call from an unknown number (Curtin et al., 2005).

Focus groups	This method improves interactivity, and enables the LBH to ask questions regarding specific topics of the various waves of the pandemic by preliminarily asking participants questions, and then showing them the timeline to clarify COVID-19 initiatives and policies.	This method may lead to small sample sizes. Also, there may be low participation from residents due to lack of incentive and time commitment for participating.
Hiring an independent firm to conduct surveys	This method takes responsibility and pressure off of LBH staff in regards to survey outreach and distribution.	This method is likely the least cost effective.

One major limitation we faced in conducting in person surveys was language barriers. In section 2.10, we discuss the diversity of the Hounslow Borough, including the many languages spoken by Hounslow citizens excluding English. To overcome this limitation, these surveys should have various language options for common languages spoken in Hounslow. We recommend that the borough encourage and accept survey responses over a much longer period of one month. This suggested time period draws from the UK Census, in which citizens have roughly 20 days to fill out and submit a 10-minute survey (Russell, 2021).

Another limitation of our study involved our survey's designation as an independent research study. While this designation accelerated our survey distribution timeframe, our team had to remove all markings of government affiliation from our distribution. We posit that a survey with government branding would promote greater participation from the community. People were uninterested in taking a survey from an institution they were unfamiliar with, and the LBH is a familiar organization to the community. Therefore, we recommend that the LBH brands the survey with the government logo to promote credibility and cooperation.

2. **We recommend that the London Borough of Hounslow expand their methods of communication for their policies.**

   Our survey results showed that older respondents thought LBH communication of COVID-19 policies was better than younger respondents did. The London Borough of Hounslow utilized methods of communicating policy updates primarily through mail-drops and through supplementary online publications to the LBH website. It seems that the older residents of

Hounslow liked the mail drops and were able to see new regulations and policies from the mail drops. However, younger people are more likely to get news through online sources such as social media (Oxford University, 2019). We recommend that the LBH use online methods, like social media, to spread news for their policies to target younger residents more effectively.

5.3 Concluding Statement and Greater Implications

The goal of this project was to assess the Hounslow public's perceptions surrounding the LBH COVID-19 response. We found that respondents perceived PPE, testing, and vaccines to be accessible and policy communication to be effective. We also identified that residents thought the implementation of policy was too slow. This theme reflects a widespread UK sentiment on a local scale. In our literature review and timeline compilation, we observed nationwide sentiments expressing a right-policy-too-late attitude, reflecting frustration with the slow pace of the national government's response. By considering our suggestions, the LBH can better serve the Hounslow community in future pandemic responses, translating into policy adherence, government approval, and improved mental, physical, and economic wellbeing in the borough.

6.0: References

About the BBC. (n.d.). Retrieved June 14, 2022, from https://www.bbc.com/aboutthebbc

Al-Hasan, A., Yim, D., & Khuntia, J. (2020). Citizens' Adherence to COVID-19 Mitigation Recommendations by the Government: A 3-Country Comparative Evaluation Using Web-Based Cross-Sectional Survey Data. *Journal of Medical Internet Research*, *22*(8), e20634. https://doi.org/10.2196/20634

BBC News. (2020, May 9). Coronavirus in the UK: The first 100 days. In *BBC News*. https://www.bbc.com/news/av/uk-politics-52584496

Bedford, E. (n.d.). *Frequency of food shopping trips by age group in the UK 2020*. Statista. Retrieved June 15, 2022, from https://www.statista.com/statistics/1125722/frequency-of-food-shopping-trips-by-age-group-uk/

Berinsky, A. J. (2017). Measuring Public Opinion with Surveys. *Annual Review of Political Science*, *20*(1), 309–329. https://doi.org/10.1146/annurev-polisci-101513-113724

Bermingham, R. (2020). *Media, communications and COVID-19: What are experts concerned about?* https://post.parliament.uk/media-communications-and-covid-19-what-are-experts-concerned-about/

Bishop, K. (2020, July 27). Why are millennials and Gen Z turning to Instagram as a news source? *The Guardian*. https://www.theguardian.com/lifeandstyle/2020/jul/27/instagram-news-source-social-media

Burki, T. (2019). Vaccine misinformation and social media. *The Lancet Digital Health*, *1*(6), e258–e259. https://doi.org/10.1016/S2589-7500(19)30136-0

Carey, L. (n.d.). *Contingency Planning – Hounslow Intranet!* Retrieved May 25, 2022, from

https://intranet.lbh-build.net/working-together/contingency-planning/contingency-planning/

Chadwick, A., Kaiser, J., Vaccari, C., Freeman, D., Lambe, S., Loe, B. S., Vanderslott, S., Lewandowsky, S., Conroy, M., Ross, A. R. N., Innocenti, S., Pollard, A. J., Waite, F., Larkin, M., Rosebrock, L., Jenner, L., McShane, H., Giubilini, A., Petit, A., & Yu, L.-M. (2021). Online Social Endorsement and Covid-19 Vaccine Hesitancy in the United Kingdom. *Social Media + Society*, *7*(2), 20563051211008816. https://doi.org/10.1177/20563051211008817

Christie, L. (2021). *COVID-19 vaccine misinformation*. https://post.parliament.uk/covid-19-vaccine-misinformation/

Ciotti, M., Ciccozzi, M., Terrinoni, A., Jiang, W.-C., Wang, C.-B., & Bernardini, S. (2020). The COVID-19 pandemic. *Critical Reviews in Clinical Laboratory Sciences*, *57*(6), 365–388. https://doi.org/10.1080/10408363.2020.1783198

City Population. (n.d.). *Hounslow (Borough, United Kingdom)—Population Statistics, Charts, Map and Location*. Retrieved June 12, 2022, from https://www.citypopulation.de/en/uk/london/wards/E09000018__hounslow/

Coelho, F. C., Lana, R. M., Cruz, O. G., Villela, D., Bastos, L. S., Piontti, A. P. y, Davis, J. T., Vespignani, A., Codeço, C. T., & Gomes, M. F. C. (2020). *Assessing the potential impact of COVID-19 in Brazil: Mobility, Morbidity and the burden on the Health Care System* [Preprint]. Epidemiology. https://doi.org/10.1101/2020.03.19.20039131

Curran, C. S. (2020, November 6). *2-6 November: My week by Cllr. Steve Curran 2020*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2080/my_week_by_cllr_steve_curran_2020/8

Curtin, R., Presser, S., & Singer, E. (2005). Changes in Telephone Survey Nonresponse over the Past

Quarter Century. *Public Opinion Quarterly*, *69*(1), 87–98. https://doi.org/10.1093/poq/nfi002

Dergiades, T., Milas, C., Mossialos, E., & Panagiotidis, T. (2020). Effectiveness of Government Policies in Response to the COVID-19 Outbreak. *SSRN Electronic Journal*, *2*(4), e0000242. https://doi.org/10.2139/ssrn.3602004

DHSC, Throup MP, M., The Rt Hon Sajid Javid MP, & The RT Hon Boris Johnson MP. (2021, December 8). *UK marks one year since deploying world's first COVID-19 vaccine*. GOV.UK. https://www.gov.uk/government/news/uk-marks-one-year-since-deploying-worlds-first-covid-19-vaccine

Dowler, E., Bauer, M., Green, J., & Gasperoni, G. (2006). *Assessing public perception: Issues and methods*. https://doi.org/: https://www.researchgate.net/publication/30528118

Faber, J., & Fonseca, L. M. (2014). How sample size influences research outcomes. *Dental Press Journal of Orthodontics*, *19*(4), 27–29. https://doi.org/10.1590/2176-9451.19.4.027-029.ebo

Flynn, D., Moloney, E., Bhattarai, N., Scott, J., Breckons, M., Avery, L., & Moy, N. (2020). COVID-19 pandemic in the United Kingdom. *Health Policy and Technology*, *9*(4), 673–691. https://doi.org/10.1016/j.hlpt.2020.08.003

Freedman, L. (2020). Scientific Advice at a Time of Emergency. SAGE and Covid-19. *The Political Quarterly*, *91*(3), 514–522. https://doi.org/10.1111/1467-923X.12885

Freeman, D., Link to external site, this link will open in a new window, Loe, B. S., Chadwick, A., Vaccari, C., Waite, F., Rosebrock, L., Jenner, L., Petit, A., Lewandowsky, S., Vanderslott, S., Innocenti, S., Larkin, M., Giubilini, A., Ly-Mee, Y., McShane, H., Pollard, A. J., & Lambe, S. (2020). COVID-19 vaccine hesitancy in the UK: The Oxford coronavirus explanations, attitudes, and narratives survey (Oceans) II. In *Psychological Medicine* (pp. 1–15). http://dx.doi.org/10.1017/S0033291720005188

Giuliani, M., Ichino, A., Bonomi, A., Martoni, R., Cammino, S., & Gorini, A. (2021). Who Is Willing to Get Vaccinated? A Study into the Psychological, Socio-Demographic, and Cultural Determinants of COVID-19 Vaccination Intentions. *Vaccines*, *9*(8), 810. https://doi.org/10.3390/vaccines9080810

GOV.UK. (n.d.-a). *Cases in Hounslow: Coronavirus in the UK*. Retrieved May 25, 2022, from https://coronavirus.data.gov.uk/details/cases?areaType=ltla&areaName=Hounslow#card-cases_by_specimen_date

GOV.UK. (n.d.-b). *UK Summary*. GOV.UK. Retrieved March 31, 2022, from https://coronavirus.data.gov.uk

GOV.UK. (2020, March 3). *Coronavirus action plan: A guide to what you can expect across the UK*. GOV.UK. https://www.gov.uk/government/publications/coronavirus-action-plan/coronavirus-action-plan-a-guide-to-what-you-can-expect-across-the-uk

GOV.UK. (2021a, January 13). *UK COVID-19 vaccines delivery plan*. GOV.UK. https://www.gov.uk/government/publications/uk-covid-19-vaccines-delivery-plan/uk-covid-19-vaccines-delivery-plan

GOV.UK. (2021b, February 13). *UK COVID-19 vaccine uptake plan*. GOV.UK. https://www.gov.uk/government/publications/covid-19-vaccination-uptake-plan/uk-covid-19-vaccine-uptake-plan

Haddon, C. (2021). Lessons Learned? Britain's COVID Response. *Political Insight*, *12*(1), 4–7. https://doi.org/10.1177/20419058211000994

Henry, G. (1990). *Practical Sampling*. SAGE Publications, Inc. https://doi.org/10.4135/9781412985451

Hick, R., & Murphy, M. P. (2020). Common shock, different paths? Comparing social policy responses

to COVID-19 in the UK and Ireland. *Social Policy & Administration*, *55*(2), 312–325. https://doi.org/10.1111/spol.12677

HM Treasury, & Sunak, R. M. (2020a, March 17). *Chancellor of the Exchequer, Rishi Sunak on COVID19 response*. GOV.UK. https://www.gov.uk/government/speeches/chancellor-of-the-exchequer-rishi-sunak-on-covid19-response

HM Treasury, & Sunak, R. M. (2020b, October 31). *Furlough Scheme Extended and Further Economic Support announced*. GOV.UK. https://www.gov.uk/government/news/furlough-scheme-extended-and-further-economic-support-announced

Hwang, T.-J., Rabheru, K., Peisah, C., Reichman, W., & Ikeda, M. (n.d.). Loneliness and social isolation during the COVID-19 pandemic. *International Psychogeriatrics*, 1–4. https://doi.org/10.1017/S1041610220000988

Igielnik, R. (2020, June 23). *Most Americans say they regularly wore a mask in stores in the past month; fewer see others doing it*. Pew Research Center. https://www.pewresearch.org/fact-tank/2020/06/23/most-americans-say-they-regularly-wore-a-mask-in-stores-in-the-past-month-fewer-see-others-doing-it/

Institute for Government Analysis. (2021, December). *Timeline of UK government coronavirus lockdowns and restrictions | The Institute for Government*. https://www.instituteforgovernment.org.uk/charts/uk-government-coronavirus-lockdowns

Jiao, W., Huang, W., & Fan, H. (2022). Evaluating spatial accessibility to healthcare services from the lens of emergency hospital visits based on floating car data. *International Journal of Digital Earth*, *15*(1), 108–133. https://doi.org/10.1080/17538947.2021.2014578

Johnson, B. (2020, March 19). *Prime Minister's statement on coronavirus (COVID-19): 19 March 2020* [Speech]. https://www.gov.uk/government/speeches/pm-statement-on-coronavirus-19-march-2020

Kasprak, A. (2020, April 22). *Are Bill Gates and the ID2020 Coalition Using COVID-19 To Build Global Surveillance State?* https://www.snopes.com/fact-check/bill-gates-id2020/

Kaye, B. K., & Johnson, T. J. (1999). Research Methodology: Taming the Cyber Frontier: Techniques for Improving Online Surveys. *Social Science Computer Review*, *17*(3), 323–337. https://doi.org/10.1177/089443939901700307

LBH. (n.d.). *The economic impact*. London Borough of Hounslow. Retrieved May 23, 2022, from https://www.hounslow.gov.uk/info/19999/your_council_and_elections/2189/the_economic_impact

London Borough of Hounslow. (2022). *One Hounslow, Many Voices*. https://www.hounslow.gov.uk/info/20004/community_and_living/2265/one_hounslow_many_voices

Loomba, S., de Figueiredo, A., Piatek, S. J., de Graaf, K., & Larson, H. J. (2021). Measuring the impact of COVID-19 vaccine misinformation on vaccination intent in the UK and USA. *Nature Human Behaviour*, *5*(3), 337–348. https://doi.org/10.1038/s41562-021-01056-1

Maloney, M. J., Rhodes, N. J., & Yarnold, P. R. (2020). *Mask mandates can limit COVID spread: Quantitative assessment of month-over-month effectiveness of governmental policies in reducing the number of new COVID-19 cases in 37 US States and the District of Columbia* (p. 2020.10.06.20208033). medRxiv. https://doi.org/10.1101/2020.10.06.20208033

McKee, M., Altmann, D., Costello, A., Friston, K., Haque, Z., Khunti, K., Michie, S., Oni, T., Pagel, C., Pillay, D., Reicher, S., Salisbury, H., Scally, G., Yates, K., Bauld, L., Bear, L., Drury, J., Parker,

M., Phoenix, A., … West, R. (2022). Open science communication: The first year of the UK's Independent Scientific Advisory Group for Emergencies. *Health Policy*, *126*(3), 234–244. https://doi.org/10.1016/j.healthpol.2022.01.006

Moxham-Hall, V., & Strang, L. (n.d.). *Public opinion and trust in government during a public health crisis*. Retrieved May 24, 2022, from https://www.kcl.ac.uk/news/public-opinion-and-trust-in-government-during-a-public-health-crisis

Oxford Economics, & London Borough of Hounslow. (2020). *The Economic Impact of Reduced Activity at Heathrow* (p. 47). Oxford Economics. https://lbhounslow.sharepoint.com/sites/InternetLinks/cc/Shared%20Documents/Forms/AllItems.aspx?id=%2Fsites%2FInternetLinks%2Fcc%2FShared%20Documents%2FWebsite%20documents%2FCMS%20Docs%2FImpact%20of%20reduced%20activity%20at%20Heathrow%2010th%20July%202020%2Epdf&parent=%2Fsites%2FInternetLinks%2Fcc%2FShared%20Documents%2FWebsite%20documents%2FCMS%20Docs&p=true&ga=1

Oxford University. (2019). *How Young People Consume News and The Implications For Mainstream Media*. https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2021-02/FlamingoxREUTERS-Report-Full-KG-V28.pdf

Paton, C. (2022). World-beating? Testing Britain's Covid response and tracing the explanation. *Health Economics, Policy and Law*, *17*(2), 238–245. https://doi.org/10.1017/S174413312000033X

QPZM LocalStats UK. (2022). *Hounslow Census Demographics United Kingdom*. http://localstats.co.uk/census-demographics/england/london/hounslow

Qualtrics. (n.d.). *How to Determine Sample Size in Research*. Qualtrics. Retrieved June 21, 2022, from

https://www.qualtrics.com/uk/experience-management/research/determine-sample-size/

Reniers, Dr. R. (n.d.). *Why do young people take more risks against social distancing?* University of Birmingham. Retrieved June 15, 2022, from https://www.birmingham.ac.uk/research/perspective/young-people-risks-social-distancing.aspx

Russell, B. (2021, March 19). *What is the Census? How the public poll works, who has to do it and when it's happening in 2021*. Inews.Co.Uk. https://inews.co.uk/news/uk/census-2021-what-how-often-uk-taken-when-day-who-complete-questions-894344

Sasse, T., Haddon, Dr. C., & Nice, A. (2020). Science advice in a crisis. *Institute for Government*. https://www.instituteforgovernment.org.uk/sites/default/files/publications/science-advice-crisis_0.pdf

Seale, H., Heywood, A. E., Leask, J., Sheel, M., Thomas, S., Durrheim, D. N., Bolsewicz, K., & Kaur, R. (2020). COVID-19 is rapidly changing: Examining public perceptions and behaviors in response to this evolving pandemic. *PLOS ONE*, *15*(6), e0235112. https://doi.org/10.1371/journal.pone.0235112

Sesagiri Raamkumar, A., Tan, S. G., & Wee, H. L. (2020). Measuring the Outreach Efforts of Public Health Authorities and the Public Response on Facebook During the COVID-19 Pandemic in Early 2020: Cross-Country Comparison. *Journal of Medical Internet Research*, *22*(5), e19334. https://doi.org/10.2196/19334

Shelton, J. (n.d.). *The Anti-Mask League Of 1919: The Anti-Masker Movement That Cost The Pandemic Thousands Of Lives*. History Daily. Retrieved May 27, 2022, from https://historydaily.org/anti-mask-league-1919-cost-thousands-lives

Sinclair, M., O'Toole, J., Malawaraarachchi, M., & Leder, K. (2012). Comparison of response rates and

cost-effectiveness for a community-based survey: Postal, internet and telephone modes with generic or personalised recruitment approaches. *BMC Medical Research Methodology*, *12*(1), 132. https://doi.org/10.1186/1471-2288-12-132

Skowronek, D., & Duerr, L. (2009). The convenience of nonprobability: Survey strategies for small academic libraries. *College & Research Libraries News*, *70*(7), 412–415. https://doi.org/10.5860/crln.70.7.8221

Sullivan, O., & Gershuny, J. (2021). *UKTUS; UK Time Diary StudyUnited Kingdom Time Use SurveyUnited Kingdom Time Use Survey, 2014-2015* (1st Edition) [Data set]. UK Data Service. https://doi.org/10.5255/UKDA-SN-8128-1

Sun, C., & Zhai, Z. (2020). The efficacy of social distance and ventilation effectiveness in preventing COVID-19 transmission. *Sustainable Cities and Society*, *62*, 102390. https://doi.org/10.1016/j.scs.2020.102390

Taylor, S., & Asmundson, G. J. G. (2021). Negative attitudes about facemasks during the COVID-19 pandemic: The dual importance of perceived ineffectiveness and psychological reactance. *PLOS ONE*, *16*(2), e0246317. https://doi.org/10.1371/journal.pone.0246317

Thorpe Huerta, D., Hawkins, J. B., Brownstein, J. S., & Hswen, Y. (2021). Exploring discussions of health and risk and public sentiment in Massachusetts during COVID-19 pandemic mandate implementation: A Twitter analysis. *SSM - Population Health*, *15*, 100851. https://doi.org/10.1016/j.ssmph.2021.100851

University of Oxford. (n.d.). *COVID-19 Government Response Tracker*. Retrieved March 22, 2022, from https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker

Vehovar, V., Toepoel, V., & Steinmetz, S. (2016). *Non-probability sampling* (pp. 329–346).

Williams, S. N., Armitage, C. J., Tampe, T., & Dienes, K. (2020). Public perceptions and experiences of

social distancing and social isolation during the COVID-19 pandemic: A UK-based focus group study. *BMJ Open*, *10*(7), e039334. https://doi.org/10.1136/bmjopen-2020-039334

World Health Organization. (n.d.). *WHO Coronavirus (COVID-19) Dashboard*. Retrieved May 25, 2022, from https://covid19.who.int

Yermal Jr, B. (2020, July 1). The Mask Debate Isn't Just About Saving Face. Adults Who Wear Them and Those Who Don't Explain Why. *Morning Consult*. https://morningconsult.com/2020/07/01/the-mask-debate-isnt-just-about-saving-face-adults-who-wear-them-and-those-who-dont-explain-why/

Yuki, K., Fujiogi, M., & Koutsogiannaki, S. (2020). COVID-19 pathophysiology: A review. *Clinical Immunology*, *215*, 108427.

Appendix A: Table of Timeline Dates and References

A.1 Hounslow Timeline Table

Date	Category	Description and Reference	Further Information
16 March 2020	**closures**	All nonessential contact and travel is stopped [1]	
20 March 2020	**closures**	All schools close [2]	
23 March 2020	**closures**	The first stay at home order is placed [3]	
24 March 2020	**distancing**	Social distancing (2 m) is enforced [4]	
26 March 2020	**closures**	Lockdown measures are legally enforced [5]	
20 April 2020	**testing**	Regional drive thru test centres open	At Heathrow Airport and Twickenham Stadium
7 May 2020	**distancing**	Hounslow Council creates more spaces for people to walk, bike, and social distance [6]	
8 June 2020	**distancing**	Hounslow Council transforms South Chiswick into a low traffic area [7]	Done for the purpose of increasing public space to travel by foot, bike, and public transport
15 June 2020	**distancing**	Schools across Hounslow are restricting traffic [8]	Traffic is restricted during school drop-off and pickup times to support social distancing
23 June 2020	**closures**	Schools are set to fully reopen in September 2020 [9]	
5 July 2020	**testing**	First mobile testing unit operated by the UK army commences in Hounslow	The site is Alice Way Gurdwara in Hounslow

22 July 2020	**testing**	Army COVID-19 testing transfers to commercial testing	Letter from DHSC outlining handover
5 August 2020	**testing**	Static walk-up COVID-19 testing sites (LTS) outlined to the LBH for an initial 3-month duration	Residents could digitally book a attest slot or walk up with no appointment necessary
17 August 2020	**testing**	DHSC trialed a mini surge COVID-19 testing procedure	Trial was at St. Leonard's Church in Heston due to the rising cases in the area
1 September 2020	**testing**	Local test sites submitted for approval	Test sites included Brabazon Road, Padstow Walk, and Stamford Brook
14 September 2020	**distancing**	The new "rule of six" is implemented. [10]	Social gatherings of more than six individuals are made illegal. A fine will be enforced for those who break this rule. Gatherings of more than 30 people are subject to a £10,000
22 September 2020	**closures**	New restrictions arise [11]	These restrictions include a work from home advisory and a 10 pm curfew
15 October 2020	**closures**	Hounslow moves from medium to high COVID-19 alert level [12]	
5 November 2020	**closures**	The second national lockdown is enforced in Hounslow [13]	A month-long lockdown was introduced due to COVID cases increasing rapidly across the UK. Citizens are only allowed to go out for absolutely essential activities such as work (if unable to work from home), education, essential shopping, exercise, caring for another, and medical appointments
24 November 2020	**distancing**	Up to three households are allowed to meet for Christmas [14]	Three households can meet during a 5 day period for Christmas, from December 23 to December 28
2 December	**distancing**	Citizens are allowed to	Citizens can leave for any purpose, but

2020		leave their homes [15]	must follow the Rule of Six.
2 December 2020	**closures**	London enters into Tier 3 COVID restrictions. [15]	Hospitality venues must close everything aside from takeout or delivery services. Spectator sporting events can not resume. The rule of six continues to be enforced in public outdoor spaces. Wedding receptions are banned. People cannot interact with others from outside of their household at places of worship.
12 December 2020	**testing**	Static site: Community Asymptomatic/LFT testing received and responded to by LBH	
19 December 2020	**closures**	All of London's boroughs are entered into a new Tier 4 stay at home alert [41]	Tier 4 is a 'stay at home' alert level implemented due to a rise in COVID infections.
30 December 2020	**closures**	Schools in Hounslow close [9]	Schools close to all students, except the children of key workers until 8 March 2021
5 January 2021	**testing**	First Static Community Asymptomatic Lateral flow Testing (LFT) sites open in LBH corporate property	
6 January 2021	**closures**	London enters third national lockdown [18]	Stay at home order is enforced. Hounslow residents are urged to follow the UK government's guidance
16 January 2021	**testing**	LBH developed first mobile asymptomatic testing site	Testing operated at a business via a van
18 January 2021	**testing**	Free at home test kits [19]	Hounslow residents can order an at home test kit through the UK government's website
22 February 2021	**vaccines**	Ongoing vaccination programme was	Eligible groups at this point include people ages 65 and older, people who are

		emphasised for eligible groups [20]	clinically vulnerable or high risk, frontline health workers, and frontline social care workers.
8 March 2021	**closures**	Schools reopen [9]	Open for in person education, including outdoor after-school sports
29 March 2021	**distancing**	Stay at home message updated [22]	Outdoor activity is prioritised following the rule of six.
4 May 2021	**testing**	First LBH surge including two MTU deployments and door-to-door testing (until 14 May 2021)	Around Isleworth and Syon areas
19 May 2021	**testing**	Surge testing measures are put into place [23]	The Hounslow Council held a mass PCR testing event to combat the Delta variant.
23 May 2021	**testing**	Second LBH surge including five deployments of MTUs and door-to-door testing (until 27 June 2021)	Across the west of the borough
23 May 2021	**vaccines**	Stepping Up for Hounslow programme begins [24]	Thousands of residents are urged to get vaccinated at pop-up clinics.
15 June 2021	**vaccines**	Vaccinations and PCR tests are encouraged [25]	
21 June 2021	**vaccines**	Stepping Up for Hounslow programme ends [24]	53,000 people in Hounslow were vaccinated over a four week period; 100,000 people total in Hounslow are fully vaccinated
5 July 2021	**testing**	Residents are encouraged to test twice a week [27]	
19 July 2021	**vaccines**	Quarantine after travel lifted [27]	Fully vaccinated individuals no longer have a quarantine requirement when returning to Hounslow from middle risk countries

19 July 2021	**distancing**	Social distancing rules are removed [27]	The one metre plus rule is eliminated.
19 July 2021	**closures, PPE, distancing**	Most restrictions are removed [28]	There is no longer government guidance to work from home. The 2 metre social distancing practice is no longer enforced. There is no longer a limit on how many people others can meet. There are no longer limits on the number of people that can attend weddings, funerals, or other celebrations. All capacity limits at sporting or entertainment events have been lifted. Hospitality venues no longer have to follow social distancing measures. The legal requirement to wear masks is lifted. There are no longer group size restrictions at places of worship.
31 July 2021	**vaccines**	Ongoing vaccination programme for all adults is emphasised [29]	
31 July 2021	**testing**	Biweekly tests are encouraged [29]	
31 July 2021	**testing**	LBH ends MTU provision with LTS and home-testing alternatives	Established rapid/LFT test infrastructure across the borough
13 September 2021	**closures**	Shop Local initiative begins [30]	All households were given a £20 voucher to use in local shops
1 October 2021	**vaccines**	Residents are urged to get the vaccine [31]	Positive cases in the UK increased
1 October 2021	**testing**	Residents are urged to take a COVID-19 test twice weekly [31]	
22 October 2021	**vaccines**	Residents are again urged to get the vaccine [32]	Positive cases in the UK increased
22 October 2021	**testing**	Residents are urged to take a COVID-19 test	

		twice weekly [32]	
29 October 2021	**PPE**	Face coverings encouraged [33]	Residents are encouraged to wear face coverings in crowded or enclosed spaces
19 November 2021	**vaccines**	Booster jabs are encouraged to all residents [34]	
3 December 2021	**PPE**	Face coverings are mandatory on all public transport and in all shops [35]	
3 December 2021	**testing**	Test and Trace program enforced [35]	People who are contacted by Test and Trace as a close contact must self isolate regardless of age and vaccination status.
3 December 2021	**testing**	PCR test necessary after travel [35]	Everyone entering the UK must take a PCR test by the end of the second full day after their arrival and self-isolate until they have a negative test
3 December 2021	**testing**	Symptomatic residents are urged to test [35]	Residents are encouraged to take a lateral flow or PCR test if symptomatic and isolate for 10 days if positive
3 December 2021	**vaccines**	Residents are urged to get the COVID-19 and Flu vaccines [35]	
6 December 2021	**vaccines**	A booster is offered to everyone over 18 [36]	People over 16 can also get booster if they have a severely weakened immune system [36]
	vaccines	Vaccine eligibility expands [36]	People aged 16 and over with weakened immune systems are eligible for the booster
10 December 2021	**PPE**	Masks in indoor public venues are required in response to the Omicron variant [36]	
13 December 2021	**distancing**	Work from home is encouraged by Cllr Steve	

		Curran [36]	
15 December 2021	**vaccines**	The NHS Covid Pass on the NHS App is required for entry into nightclubs [36]	The COVID pass is a way to show proof of your COVID-19 vaccination. People can download it as a PDF, have it emailed to them, or save it to their mobile device.
27 January 2022	**PPE**	Masks are no longer required in public indoor settings [38]	
27 January 2022	**PPE**	Masks remain mandatory on public transport [38]	
27 January 2022	**testing**	New PCR testing sites [38]	Three PCR testing locations are announced for symptomatic residents
18 February 2022	**vaccines**	The Council launches a vaccine bus to improve vaccine access [39]	
21 February 2022	**testing**	Biweekly testing requirement in schools is removed [40]	Staff and students in most education and childcare settings no longer have to test twice weekly
24 February 2022	**distancing**	People with Covid are no longer legally required to self-isolate [40]	
24 February 2022	**testing**	Routine contact tracing will end [40]	People in contact with someone with COVID will no longer be advised to self-isolate or take daily tests
15 March 2021	**testing**	DHSC letter outlines end of LTS testing provision	Sites to be removed June 2022
1 April 2022	**testing**	Covid tests no longer free for most people [40]	LFT sites close: 6 June 2022: Brabazon Road ended 20 June 2022: Padstow Walk ended TBC: Stamford Brook
1 April 2022	**vaccines**	Covid Passports no longer recommended, except for international travel [40]	The COVID pass is a way to show proof of your COVID-19 vaccination for purposes of abroad travel. People can download it as a PDF, have it emailed to them, or save it to their mobile device.

A.2 UK Timeline Table

20 March 2020	**closures**	Boris Johnson announces mass closures [42]	Closures of pubs, cafes, and restaurants except for take-away food are conducted. Leisure centres, cinemas, theatres, and nightclubs are told to close as soon as possible
23 March 2020	**closures**	Boris Johnson announces partial UK lockdown [43]	Citizens were not to leave their houses except to buy necessities, exercise, and medical needs
26 March 2020	**closures**	Legal beginning of first UK lockdown [41]	
16 April 2020	**closures**	Lockdown extended for at least three weeks [41]	Government releases five criteria that must be met before restrictions are eased [44]: 1) Ensuring that the NHS could cope 2) A "sustained and consistent" decrease in the daily death rate, 3) Reliable data showing the rate of infection decreased to "manageable levels", 4) Confidence in the supply of PPE for future need, and 5) Coincidence that the ease of restrictions would not lead to a spike in cases.
1 May 2020	**testing**	Matt Hancock confirms that goal of 100,000 tests a day has been surpassed [45]	
10 May 2020	**closures**	Workplace restrictions are eased [41]	People who cannot work from home can return to the workplace
13 May 2020	**closures**	Garden centres and outdoor sports courts are reopened [46]	Residents are allowed to exercise outdoors with up to one member of another household
28 May 2020	**testing**	Test and Trace system is implemented in the UK [47]	The Test and Trace system is a contact tracing initiative.

28 May 2020	**distancing**	Gatherings of up to 6 people from different households are allowed [48]	
1 June 2020	**closures**	English schools are reopened in phases [41]	
15 June 2020	**closures**	Non-essential shops are allowed to reopen in England [41]	
4 July 2020	**closures**	Restrictions are reduced in England [41]	Pubs, restaurants, and hairdressers are allowed to reopen
18 July 2020	**distancing**	Local authorities gain powers to enforce social distancing [41]	
3 August 2020	**closures**	Eat Out to Help Out is implemented [41]	Discounts on restaurant meals are offered to promote business continuity
14 August 2020	**closures**	Indoor theatres, bowling alleys, and soft play areas are reopened [41]	
14 September 2020	**distancing**	Gatherings of more than 6 are banned in England [41]	
22 September 2020	**closures**	Work from home order returns and a 10pm curfew is implemented [41]	
14 October 2020	**closures**	Three tier system of covid restrictions is implemented in England [41]	Medium local alert areas are advised to socialise following the rule of six. Along with this, bars, pubs, and clubs will be closed between 10 pm and 5 am. High local alert levels advise their residents not to socialise with others outside their household in an indoor setting. Also, people must follow the rule

			of six in outdoor settings. Along with this, bars, pubs, and clubs will be closed between 10 pm and 5 am. In very high-local alert level areas, people must not socialise with others outside their household in an indoor setting. The rule of six continues to apply for outdoor areas, including parks and beaches. Pubs and bars must only remain open if they operate as a restaurant. People in these very high alert areas must not travel outside these areas, except for school, work, and youth services. Social distancing rules and wearing face coverings applies in all three tiers. [11]
5 November 2020	**closures**	Legal beginning of second English lockdown [41]	
24 November 2020	**distancing**	Three households are allowed to meet for Christmas between 23 and 27 December [41]	
2 December 2020	**closures**	Second lockdown is lifted and new, stricter 3 tier system of restrictions is introduced [41]	Tier 1's guidance states that groups of up to six people can meet indoors and outdoors. Tier 2's guidance states that groups of up to six people can meet outdoors. Tier 3's guidance states that groups of up to six people can meet outside in public spaces like parks, but only two people can meet in any other outdoor space. [50]
2 December 2020	**vaccines**	The Pfizer vaccine is the first vaccine approved in the UK [61]	
8 December 2020	**vaccines**	The Pfizer vaccine is introduced in the UK [16]	The first person in the UK was given the Pfizer vaccine as a part of a mass vaccination programme.

21 December 2020	**closures**	A new, stricter, tier 4 of covid restrictions is introduced [41]	In Tier 4, a stay at home alert is legally enforced. Residents are encouraged not to enter or leave Tier 4 areas. Nonessential retail venues must all close. Social distancing measures increase to allow one person to meet with only one other person. Residents in Tier 4 areas are not allowed to travel abroad. [51]
30 December 2020	**vaccines**	The AstraZeneca vaccine is the second vaccine approved in the UK. [21]	
6 January 2021	**closures**	Legal beginning of third English lockdown [41]	
8 January 2021	**vaccines**	The Moderna vaccine is the third vaccine approved in the UK [26]	
22 February 2021	**closures**	PM releases a roadmap for lifting lockdown [41]	
8 March 2021	**closures**	Primary and Secondary schools are reopened [41]	Outdoor recreation allowed between up to 2 people
29 March 2021	**distancing**	Stay at home is lifted, but encouraged [41]	Outdoor gatherings between two households or six people are allowed
12 April 2021	**closures**	Non-essential retail reopens [41]	Hairdressers, public buildings, outdoor venues, and indoor leisure reopen. Indoor social gatherings across households are not allowed.
17 May 2021	**distancing**	Gathering restrictions change [41]	Outdoor gatherings limited to 30 people, indoor social gatherings of up to 6 people or 2 households are allowed, indoor venues reopen, up to 10,000 spectators are allowed to attend large, outdoor-seated venues.

28 May 2021	**vaccines**	The Janssen vaccine becomes the fourth vaccine approved in the UK [17]	
14 June 2021	**distancing**	Restrictions on funerals and weddings are lifted [41]	
19 July 2021	**distancing**	Most legal limits on social contact are removed in England [41]	Final remaining sectors of the economy are reopened
8 December 2021	**closures**	Introduction of Plan B measures due to spreading of the Omicron variant [52]	Plan B includes requiring face masks to be worn indoors, office workers should work from home if able, residents in the same household as someone who tests positive (with suspected omicron), must take daily lateral flow tests for 7 days, anyone above age 18 must show their NHS Covid Pass to prove vaccination at certain locations, have a negative COVID test, or some sort of exemption. [53]
10 December 2021	**PPE**	Plan B implements face mask restrictions	Under Plan B, face masks are required in most public indoor venues. [41]
13 December 2021	**closures**	Plan B implements certain closures	Under Plan B, office workers must work from home if able. [53]
14 December 2021	**testing**	Plan B implements testing rules	Under Plan B, household contacts of a COVID positive person must take lateral flow tests daily for 7 days. [53]
15 December 2021	**vaccines**	Under Plan B, NHS COVID pass becomes mandatory in some settings [41]	The COVID pass is a way to show proof of your COVID-19 vaccination for purposes of abroad travel. People can download it as a PDF, have it emailed to them, or save it on a mobile device. [54]
2 January 2022	**PPE**	Schools will require masks upon their return [55]	UK government announces that face masks are to be worn in schools when they come back after the winter holiday

7 January 2022	**testing**	Testing requirements for travellers are changed [56]	Travellers are no longer required to quarantine or get a PCR test when leaving or arriving if they are fully vaccinated
11 January 2022	**testing**	Testing measures are eased in England [57]	People who tested positive on lateral flow will no longer be required to with a PCR test, but will be required to self-isolate for 7 days.
17 January 2022	**distancing**	The self isolation period for positive covid cases is decreased to 5 days [58]	5 days, contingent on a negative COVID test on the 5th day
17 January 2022	**vaccines**	Boosters are made available to teenagers age 16 and 17 [59]	
20 January 2022	**PPE**	Face masks are no longer required in schools [60]	
20 January 2022	**closures**	Work from home advice is dropped [60]	
27 January 2022	**closures**	Plan B restrictions expire without renewal [60]	
31 January 2022	**distancing**	Limits on number of visitors to care homes are lifted [62]	
31 January 2022	**testing**	Isolation in care homes following a positive case is reduced [62]	Isolation period after a patient tests positive is dropped from 14 to 10 days, outbreak management measures are required for 14 days from 28 days
3 February 2022	**vaccines**	Novavax vaccine is the fifth vaccine approved in the UK [63]	
11 February 2022	**testing**	Testing measures are loosened for travellers [64]	Double vaccinated travellers arriving in England and Scotland are no longer required to take COVID tests

24 February 2022	**testing**	The requirement to self isolate after testing positive for COVID is ended in England [65]	
24 February 2022	**closures**	All legal covid restrictions officially lifted in England [66]	
15 March 2022	**vaccines**	Vaccine requirements are lightened [67]	The government lifts the requirement of vaccines for care home workers in England
21 March 2022	**vaccines**	Increased booster shot availability [68]	Booster shots are offered to people over age 75 who are residents in a care home, as well as those over age 12 who are medically vulnerable
1 April 2022	**testing**	Mass free testing ends [69]	
2 April 2022	**vaccines**	Increased vaccine eligibility [70]	Vaccines for COVID-19 become available for children aged five to eleven and a second dose is encouraged after 12 weeks
14 April 2022	**vaccines**	Valneva is the sixth vaccine approved in the UK [71]	
14 April 2022	**vaccines**	The Moderna vaccine is approved for use in 6 to 11 year olds [72]	
19 April 2022	**distancing**	Social distancing requirements are lowered [73]	Patients in hospital waiting rooms are no longer required to socially distance in England

A.3 COVID-19 Milestones Table

31 Jan 2020	First Cases of COVID in the UK are confirmed [74]
5 March 2020	More than 100 cases in the UK, UK moves from ‘contain’ to ‘delay’ phase [75]
20 September 2020	Alpha Variant is identified in the UK [76]
23 December 2020	Beta variant is identified in the UK [77]
5 February 2021	Gamma Variant is identified in the UK [78][79]
22 February 2021	Delta Variant is identified in the UK [49]
27 November 2021	Omicron Variant identified in the UK [37]

A.4 Timeline References

[1] BBC. (220, March 16). Coronavirus: PM says everyone should avoid office, pubs and travelling. *BBC News*. https://www.bbc.com/news/uk-51917562

[2] Curran, C. S. (2020, March 18). *Message from Cllr Steve Curran, Leader of Hounslow Council, on the coronavirus*. London Borough of Hounslow. https://www.hounslow.gov.uk/news/article/986/message_from_cllr_steve_curran_leader_of_hounslow_council_on_the_coronavirus

[3] Cabinet Office. (2020, May 1). *[Withdrawn] Staying at home and away from others (social distancing)*. GOV.UK. https://www.gov.uk/government/publications/full-guidance-on-staying-at-home-and-away-from-others

[4] Curran, C. S. (2020, March 24). *Statement from Steve Curran, Leader of Hounslow Council | London Borough of Hounslow*. https://www.hounslow.gov.uk/news/article/991/statement_from_steve_curran_leader_of_hounslo

w_council

[5] Participation, E. (n.d.). *The Health Protection (Coronavirus, Restrictions) (England) Regulations 2020* [Text]. Statute Law Database. Retrieved May 13, 2022, from https://www.legislation.gov.uk/uksi/2020/350/regulation/6/2020-03-26

[6] London Borough of Hounslow. (2020, May 7). *Council proceeds at pace with Hounslow Streetspace initiatives to reallocate road space to pedestrians and cyclists and create more space for businesses to safely reopen*. https://www.hounslow.gov.uk/news/article/1039/council_proceeds_at_pace_with_hounslow_streetspace_initiatives_to_reallocate_road_space_to_pedestrians_and_cyclists_and_create_more_space_for_businesses_to_safely_reopen

[7] London Borough of Hounslow. (2020, June 8). *South Chiswick to become a low traffic neighbourhood | London Borough of Hounslow*. https://www.hounslow.gov.uk/news/article/1052/south_chiswick_to_become_a_low_traffic_neighbourhood

[8] London Borough of Hounslow. (2020, June 15). *School Streets programme supporting social distancing at Hounslow schools*. https://www.hounslow.gov.uk/news/article/1064/school_streets_programme_supporting_social_distancing_at_hounslow_schools

[9] *Covid-19 News Information and Documents | Hounslow Heath Junior School*. (n.d.). Retrieved May 13, 2022, from https://www.hounslowheathjunior.co.uk/covid-19-news-information-and-documents/

[10] Patel, P., & Home Office. (2020, September 14). *Rule of six comes into effect to tackle coronavirus*. GOV.UK.

https://www.gov.uk/government/news/rule-of-six-comes-into-effect-to-tackle-coronavirus

[11] Scott, E. (2020). *Covid-19 local alert levels: Three-tier system for England*. https://lordslibrary.parliament.uk/covid-19-local-alert-levels-three-tier-system-for-england/

[12] Department of Health and Social Care. (2020a, October 15). *Local COVID-19 alert level update: 15 October 2020*. GOV.UK. https://www.gov.uk/government/news/local-covid-19-alert-level-update-15-october-2020

[13] Curran, C. S. (2020, November 6). *2-6 November: My week by Cllr. Steve Curran 2020*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2080/my_week_by_cllr_steve_curran_2020/8

[14] BBC. (2020, November 25). *Covid-19: Three households can mix over Christmas in UK - BBC News*. https://www.bbc.co.uk/news/uk-55064962

[15] Prime Minister's Office. (2020, November 23). *PM statement on COVID-19 Winter Plan: 23*

[16] BBC. (2020, December 8). *Covid-19 vaccine: First person receives Pfizer jab in UK - BBC News*. https://www.bbc.co.uk/news/uk-55227325

[17] Roxby, P. (2021, May 28). Janssen single-dose Covid vaccine approved by UK. *BBC News*. https://www.bbc.com/news/health-57283837

[18] Curran, C. S. (2022, January 8). *4-8 January: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/41

[19] Curran, C. S. (2021, January 22). *18-22 January: My week by Cllr. Steve Curran 2021*. London

Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/39

[20] Curran, C. S. (2021, February 26). *22—26 February | My week by Cllr. Steve Curran 2021 | London Borough of Hounslow*. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/34

[21] Department of Health and Social Care. (2020b, December 30). *Second COVID-19 vaccine authorised by medicines regulator*. GOV.UK. https://www.gov.uk/government/news/second-covid-19-vaccine-authorised-by-medicines-regulator

[22] London Borough of Hounslow. (2021, March 26). *Hounslow Matters Newsletter: 26 March 2021*. London Borough of Hounslow. https://content.govdelivery.com/accounts/UKHOUNSLOW/bulletins/2c96a56

[23] Curran, C. S. (2021, May 21). *17—21 May | My week by Cllr. Steve Curran 2021 | London Borough of Hounslow*. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/28

[24] London Borough of Hounslow. (2021, June 18). *Surge status to end a week early in Hounslow thanks to 'incredible efforts' of residents | London Borough of Hounslow*. https://www.hounslow.gov.uk/news/article/2377/surge_status_to_end_a_week_early_in_hounslow_thanks_to_incredible_efforts_of_residents

[25] Curran, C. S. (2021, June 15). *Government extends lockdown by four weeks—Statement from Cllr*

Steve Curran | London Borough of Hounslow. https://www.hounslow.gov.uk/news/article/2370/government_extends_lockdown_by_four_weeks_-_statement_from_cllr_steve_curran

[26] Medicines and Healthcare products Regulatory Agency. (n.d.). *Moderna vaccine becomes third COVID-19 vaccine approved by UK regulator*. GOV.UK. Retrieved May 13, 2022, from https://www.gov.uk/government/news/moderna-vaccine-becomes-third-covid-19-vaccine-approved-by-uk-regulator

[27] Curran, C. S. (2021, July 9). *5—9 July: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/21

[28] Curran, C. S. (2022, July 23). *19-23 July: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/19

[29] Curran, C. S. (2022, July 30). *26-30 July: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/18

[30] Curran, C. S. (2021, September 17). *13—17 September: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/13

[31] Curran, C. S. (2022, October 1). *27 Sep—1 Oct: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/10

[32] Curran, C. S. (2022, October 22). *18-22 October: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/8

[33] Curran, C. S. (2022, October 29). *25-29 October: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/7

[34] Curran, C. S. (2021, November 19). *15—19 November: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/4

[35] Curran, C. S. (2021, December 3). *29—03 December: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_steve_curran_2021/2

[36] Curran, C. S. (2021, December 10). *6—10 December: My week by Cllr. Steve Curran 2021*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2276/my_week_by_cllr_ste

ve_curran_2021

[37] Pitas, C., Chambers, M., & Sterling, T. (2021, November 28). UK, Germany and Italy detect Omicron variant cases, Israel closes borders. *Reuters*. https://www.reuters.com/world/concerns-over-covid-variant-trigger-more-travel-curbs-southern-africa-2021-11-27/

[38] Curran, C. S. (2022, January 28). *24-28 January: My week by Cllr. Steve Curran 2022*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2369/my_week_by_cllr_steve_curran_2022/6

[39] Curran, C. S. (2022, February 18). *14-18 February: My week by Cllr. Steve Curran 2022*. London Borough of Hounslow. https://www.hounslow.gov.uk/info/20173/leaders_blog_-_my_week/2369/my_week_by_cllr_steve_curran_2022/3

[40] London Borough of Hounslow. (2022). *Coronavirus—Advice and updates*. https://www.hounslow.gov.uk/coronavirus

[41] Institute for Government Analysis. (2021, December). *Timeline of UK government coronavirus lockdowns and restrictions | The Institute for Government*. https://www.instituteforgovernment.org.uk/charts/uk-government-coronavirus-lockdowns

[42] BBC. (2020, March 20). *UK pubs and restaurants told to shut in virus fight—BBC News*. https://www.bbc.co.uk/news/uk-51981653

[43] BBC. (2020, March 24). *Coronavirus: Strict new curbs on life in UK announced by PM - BBC News*. https://www.bbc.co.uk/news/uk-52012432

[44] BBC. (2020, April 16). Coronavirus: UK lockdown extended for “at least” three weeks. *BBC News*.

https://www.bbc.com/news/uk-52313715

[45] ITV News. (2020, May 1). *Matt Hancock confirms 100,000 coronavirus testing target met | ITV News*. https://www.itv.com/news/2020-05-01/coronavirus-daily-briefing-matt-hancock-steve-powis-testing-tracing

[46] BBC. (2020, May 12). Coronavirus: House moves and viewings to resume in England. *BBC News*. https://www.bbc.com/news/uk-52641373

[47] Briggs, A., Jenkins, D., & Fraser, C. (2020, September 23). *NHS Test and Trace: The journey so far—The Health Foundation*. https://www.health.org.uk/publications/long-reads/nhs-test-and-trace-the-journey-so-far

[48] BBC. (2020, May 28). *Coronavirus: Lockdown easing to allow groups of six to meet—BBC News*. https://www.bbc.co.uk/news/uk-52839182

[49] Science Media Centre. (2021, April 19). *Expert reaction to cases of variant B.1.617 (the 'Indian variant') being investigated in the UK | Science Media Centre*. https://www.sciencemediacentre.org/expert-reaction-to-cases-of-variant-b-1-617-the-indian-variant-being-investigated-in-the-uk/

[50] Hardy, P., Blunden, J., McLellan, G., Burton, S., & MacGregor, D. (2020, December 2). *The new three-tier system: A summary of the English coronavirus restrictions in force from 2 December | Insights | DLA Piper Global Law Firm*. https://www.dlapiper.com/en/uk/insights/publications/2020/upagain/the-new-three-tier-system-a-summary-of-coronavirus-restrictions/

[51] Johnson, B., & Prime Minister's Office. (2020, December 19). *Prime Minister announces Tier 4: "Stay At Home" Alert Level in response to new COVID variant*. GOV.UK.

https://www.gov.uk/government/news/prime-minister-announces-tier-4-stay-at-home-alert-level-in-response-to-new-covid-variant

[52] Johnson, B., & Prime Minister's Office. (2021, December 8). *Prime Minister confirms move to Plan B in England*. GOV.UK. https://www.gov.uk/government/news/prime-minister-confirms-move-to-plan-b-in-england

[53] Healthwatch. (2021, December 13). *Public told to follow "Plan B" as Omicron spreads | Healthwatch Reading*. https://healthwatchreading.co.uk/news/2021-12-10/public-told-follow-plan-b-omicron-spreads

[54] NHS. (2022, April 4). *About the NHS COVID Pass*. Nhs.Uk. https://www.nhs.uk/conditions/coronavirus-covid-19/nhs-covid-pass/about-the-nhs-covid-pass/

[55] Richardson, H. (2022, January 2). Covid: Pupils to wear masks in class in England's secondary schools to tackle Omicron. *BBC News*. https://www.bbc.com/news/education-59840634

[56] BBC. (2022, January 5). Covid: Pre-departure travel tests to be scrapped. *BBC News*. https://www.bbc.com/news/business-59876063

[57] BBC. (2022, January 5). Covid: PCR not needed after positive lateral flow under new plans. *BBC News*. https://www.bbc.com/news/uk-59878823

[58] Faulkner, D. (2022, January 13). Covid self-isolation in England being cut to five full days. *BBC News*. https://www.bbc.com/news/uk-59980505

[59] Milner, G. (2022, January 16). *Covid: Children aged 16 and 17 eligible for vaccine booster doses from Monday*. https://www.gbnews.uk/news/covid-children-aged-16-and-17-eligible-for-vaccine-booster-doses-from-monday/206127

[60] Jackson, M., & O'Connor, M. (2022, January 19). Covid: Face mask rules and Covid passes to end in England. *BBC News*. https://www.bbc.com/news/uk-60047438

[61] Ledford, H., Cyranoski, D., & Van Noorden, R. (2020). The UK has approved a COVID vaccine—Here's what scientists now want to know. *Nature*, *588*(7837), 205–206. https://doi.org/10.1038/d41586-020-03441-8

[62] Faulkner, D. (2022, January 27). Covid: Care home restrictions to be eased in England. *BBC News*. https://www.bbc.com/news/uk-60151596

[63] Reed, J. (2022, February 3). Novavax Covid jab approved by UK drugs regulator. *BBC News*. https://www.bbc.com/news/health-60245736

[64] Department for Transport, Department of health and Social Care, Javid, S., & Shapps, G. (2022, February 11). *UK's new travel rules take flight*. GOV.UK. https://www.gov.uk/government/news/uks-new-travel-rules-take-flight

[65] Devlin, H. (2022, February 9). Covid rules are to be axed in England, but is pandemic's end really in sight? *The Guardian*. https://www.theguardian.com/world/2022/feb/09/covid-rules-axed-england-is-pandemic-end-really-in-sight

[66] Faulkner, D. (2022, February 24). Covid: End of legal need to self-isolate in England. *BBC News*. https://www.bbc.com/news/uk-60500287

[67] BBC. (2022, March 1). Compulsory Covid jabs for care home staff scrapped. *BBC News*. https://www.bbc.com/news/health-60575519

[68] Lindrea, V. (2022, March 20). *Coronavirus: Spring booster offered to elderly and vulnerable in England—BBC News*. https://www.bbc.com/news/health-60806913

[69] Geddes, L. (2022, March 13). ‘Pandemic is not over’: Ministers criticised for scrapping UK Covid surveillance. *The Guardian*. https://www.theguardian.com/world/2022/mar/13/pandemic-is-not-over-ministers-criticised-after-scrapping-uk-covid-surveillance

[70] BBC. (2022, April 2). Covid vaccines now available for five to 11-year olds in England. *BBC News*. https://www.bbc.com/news/health-60958507

[71] Davis, N. (2022, April 14). Valneva approved to be UK’s sixth Covid vaccine. *The Guardian*. https://www.theguardian.com/world/2022/apr/14/valneva-approved-to-be-uks-sixth-covid-vaccine

[72] MHRA. (2021, January 8). *MHRA approves the Moderna COVID-19 vaccine ‘Spikevax’ for use in 6 to 11-year olds*. GOV.UK. https://www.gov.uk/government/news/mhra-approves-the-moderna-covid-19-vaccine-spikevax-for-use-in-6-to-11-year-olds

[73] BBC. (2022, April 19). Social distancing scrapped in waiting rooms in England. *BBC News*. https://www.bbc.com/news/health-61154106

[74] BBC. (2020, January 31). *Coronavirus: Two cases confirmed in UK - BBC News*. https://www.bbc.co.uk/news/health-51325192

[75] Marsh, S., & Campbell, D. (n.d.). *Coronavirus: First UK death confirmed as cases surge to 116 | Coronavirus | The Guardian*. Retrieved May 13, 2022, from 41https://www.theguardian.com/world/2020/mar/05/more-than-a-hundred-people-in-uk-infected-with-coronavirus

[76] Rambaut, A., Loman, N., Pybus, O., Barclay, W., Barrett, J., Carabelli, A., Connor, T., Peacock, T.,

Robertson, D., & Volz, E. (2020, December). *Preliminary genomic characterisation of an emergent SARS-CoV-2 lineage in the UK defined by a novel set of spike mutations—SARS-CoV-2 coronavirus / nCoV-2019 Genomic Epidemiology*. Virological. https://virological.org/t/preliminary-genomic-characterisation-of-an-emergent-sars-cov-2-lineage-in-the-uk-defined-by-a-novel-set-of-spike-mutations/563

[77] Sample, I., & Grover, N. (2020, December 23). South African Covid-19 variant has reached the UK, says Matt Hancock. *The Guardian*. https://www.theguardian.com/world/2020/dec/23/south-african-covid-19-variant-has-reached-the-uk-says-matt-hancock

[78] UK Health Security Agency. (2021, February 5). *What do we know about the new COVID-19 variants? - UK Health Security Agency*. https://ukhsa.blog.gov.uk/2021/02/05/what-do-we-know-about-the-new-covid-19-variants/

[79] UK Health Security Agency. (2022, May 13). *Variants: Distribution of case data, 9 July 2021*. GOV.UK. https://www.gov.uk/government/publications/covid-19-variants-genomically-confirmed-case-numbers/variants-distribution-of-case-data-9-july-2021

Appendix B: Interview Questions for HRCPT

We are a group of four students from Worcester Polytechnic Institute (WPI) in Massachusetts, USA collaborating with the London Borough of Hounslow (LBH) to conduct an analysis of the public's perception of their COVID-19 response. Our goal is to identify themes in how the public perceived Hounslow's initiatives around PPE, testing access, enforced restrictions, and vaccinations. In order to gain a more holistic understanding of how the community experienced the pandemic policies, we would like to connect with those who engaged directly with the public and saw the direct implications of the response. After these conversations, we plan to distribute surveys to the Hounslow community to gain insight on overarching themes and ideas of improvement.

1) What aspect(s) of the COVID response did you work on?

2) What were the biggest obstacles you faced in your aspect(s) of the response?

3) What were the biggest obstacles the HRCPT faced in its main initiatives?

4) How would you improve a pandemic response in the future based on what you learned with COVID-19?

5) Would you be able to provide us with any contacts for further interviews in Community, Voluntary, and/or Faith sectors?

Appendix C: Statement of Informed Consent and Survey Outline

C.1 Statement of Informed Consent

Please note that this survey is entirely optional. It is estimated to take 3-6 minutes of your time. There are four sections: basic demographic information, perception of Hounslow's COVID-19 actions that were taken in response to the pandemic, the response and leadership of the London Borough of Hounslow locally, and lastly, potential opportunities for improvement.

Please note that this survey is entirely anonymous but will (optionally) collect some demographic information. No names or any identifying information will be collected, featured, or published in any reports or publications relating to this research.

The survey is designed to focus on key themes including assessing the impact of COVID-19 restrictions on the local community in Hounslow and public perception of the leadership and actions taken by the London Borough of Hounslow during the response to the pandemic.

This research project is being led by a group of students from the Worcester Polytechnic Institute (WPI) in Massachusetts (USA) in association with the London Borough of Hounslow as part of a wider COVID-19 Evaluation and Lessons Programme.

This survey is designed to capture public perception via a questionnaire. It focuses on the community's experience in Hounslow during the Pandemic, including how the London Borough of Hounslow supported the response locally. This focus involves its communications, wearing of masks, closures of public spaces, social-distancing rules, community testing, the ongoing vaccination programme, and recovery.

The London Borough of Hounslow seeks to identify lessons from information gathered as part of our Borough plan for Recovery from COVID-19 and to improve public services.

C.2 Survey Outline

Page 1: Introductory Demographics

1. What ward of Hounslow do you live in? (Dropdown: Unsure, Alphabetical list of Hounslow's Wards before 5 May 2022)
2. What is your postal code (Short answer response)

3. What gender do you identify with? (Multiple Choice: Female, Male, Nonbinary, Prefer not to answer)
4. How old are you? (Multiple Choice: 0-17, 18-24, 25-34, 35-49, 50-64, 65-79, 80+)
5. Are you employed? (Multiple Choice: Prefer not to answer; Yes, Full time; Yes, Part time; No)
6. What are your most commonly used methods of travel? (Checkbox: Car, Walk, Public transport, Bike, Scooter, Other)

Page 2: Questions on the London Borough of Hounslow's COVID-19 Response

Description: If you are unsure, please select 3

1. How effective do you believe workplace closures were in slowing the spread of COVID-19? (Scale of 1-5 with 1: Very Ineffective, 5: Very Effective)
2. How effective do you believe store closures were in slowing the spread of COVID-19? (Scale of 1-5 with 1: Very Ineffective, 5: Very Effective)
3. How effective do you believe school closures were in slowing the spread of COVID-19? (Scale of 1-5 with 1: Very Ineffective, 5: Very Effective)
4. How effective do you believe the support of social distancing in Hounslow was in slowing the spread of COVID-19? (Scale of 1-5 with 1: Very Ineffective, 5: Very Effective)
5. How effective do you believe the implementation of mask regulations in Hounslow was in slowing the spread of COVID-19? (Scale of 1-5 with 1: Very Ineffective, 5: Very Effective)
6. How accessible was PPE (personal protective equipment) to you? (Scale of 1-5 with 1: Very Inaccessible, 5: Very Accessible)
7. How accessible was COVID-19 testing to you? (Scale of 1-5 with 1: Very Inaccessible, 5: Very Accessible)
8. Did your workplace or school supply COVID-19 testing? (Multiple Choice: Yes, No, Not Applicable)
9. How accessible were vaccines in your area? (Scale of 1-5 with 1: Very Inaccessible, 5: Very Accessible)
10. Did you get vaccinated? (Multiple Choice: Fully and Boosted, Fully, Partially, No)
11. Was the London Borough of Hounslow’s communication of COVID-19 regulations effective? (Multiple Choice: Yes, No, Somewhat, I don’t know)

12. Please explain your answer above (Free Response)

Page 3: Questions on Initiatives in the London Borough of Hounslow's COVID-19 Response

Description: If you are unsure, please select 3

1. Did you know about Hounslow's Shop Local initiative? (Multiple Choice: Yes, No)
2. If yes, did it benefit you? (Scale of 1-5 with 1: Not Beneficial, 5: Very Beneficial)
3. Did you know that the London Borough of Hounslow created more outdoor spaces for walking and biking? (Multiple Choice: Yes, No)
4. If yes, did it benefit you? (Scale of 1-5 with 1: Not Beneficial, 5: Very Beneficial)
5. Did you know that the London Borough of Hounslow offered the option to order free at-home test kits? (Multiple Choice: Yes, No)
6. If yes, did it benefit you? (Scale of 1-5 with 1: Not Beneficial, 5: Very Beneficial)
7. Did you know about the Stepping Up for Hounslow vaccine initiative? (Multiple Choice: Yes, No)
8. If yes, did it benefit you? (Scale of 1-5 with 1: Not Beneficial, 5: Very Beneficial)
9. Did you know about the London Borough of Hounslow vaccine bus?
10. If yes, did it benefit you? (Scale of 1-5 with 1: Not Beneficial, 5: Very Beneficial)

Page 4: Areas for Improvement

1. Do you think that there were any oversights in the London Borough of Hounslow's COVID-19 response? If yes, what were they? (Free Response)
2. Do you have any ideas for improvement for the London Borough of Hounslow's COVID-19 response? (Free Response)

Appendix D: Survey Distribution Flyer

D.1 Business Poster

WPI

What do you think about Hounslow's COVID-19 response?

Please take 5-10 minutes to take our survey!

scan this code to participate

D.2 Handout Flyer

WPI

What do you think about Hounslow's COVID-19 response?

Please take 5-10 minutes to take our survey!

scan this code to participate

(side 1)

WPI

PARTICIPANT INFORMATION SHEET

Project Title: An Independent Study of Public Perception of the COVID-19 Response in the London Borough of Hounslow
Student Researchers: Clara Dublin, Diana DiTullio, Jaya Mills, Theo Belmont
IRB Approval Number: IRB-22-0616

Dear Participant,
We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. Talk to others about the study if you wish. Ask us if there is anything that is not clear.

What is the project about?
Our team is working to identify and analyze key themes in the Hounslow public's perception of the London Borough of Hounslow's (LBH's) COVID-19 response.

This survey is designed to capture public perception via a questionnaire. It focusses on the community's experience in Hounslow during the Pandemic, including how the London Borough of Hounslow supported the response locally. This involves its communications, wearing of masks, closures of public spaces, social-distancing rules, community testing, the ongoing vaccination programme, and recovery.

The London Borough of Hounslow seeks to identify lessons from information gathered as part of our Borough plan for Recovery from COVID-19 and to improve public services.

Why am I being invited to participate?
As a member of the Hounslow community, our research team wants to understand your sentiments surrounding the LBH's response. We value your insights into what policies benefitted or didn't benefit you, and your ideas for improvement for future emergency response.

How much time will the project take?
The survey is estimated to take only a few minutes of your time. All questions are optional, and the survey can be submitted at any time.

Do you consent to taking part in this study? If yes, you understand that:

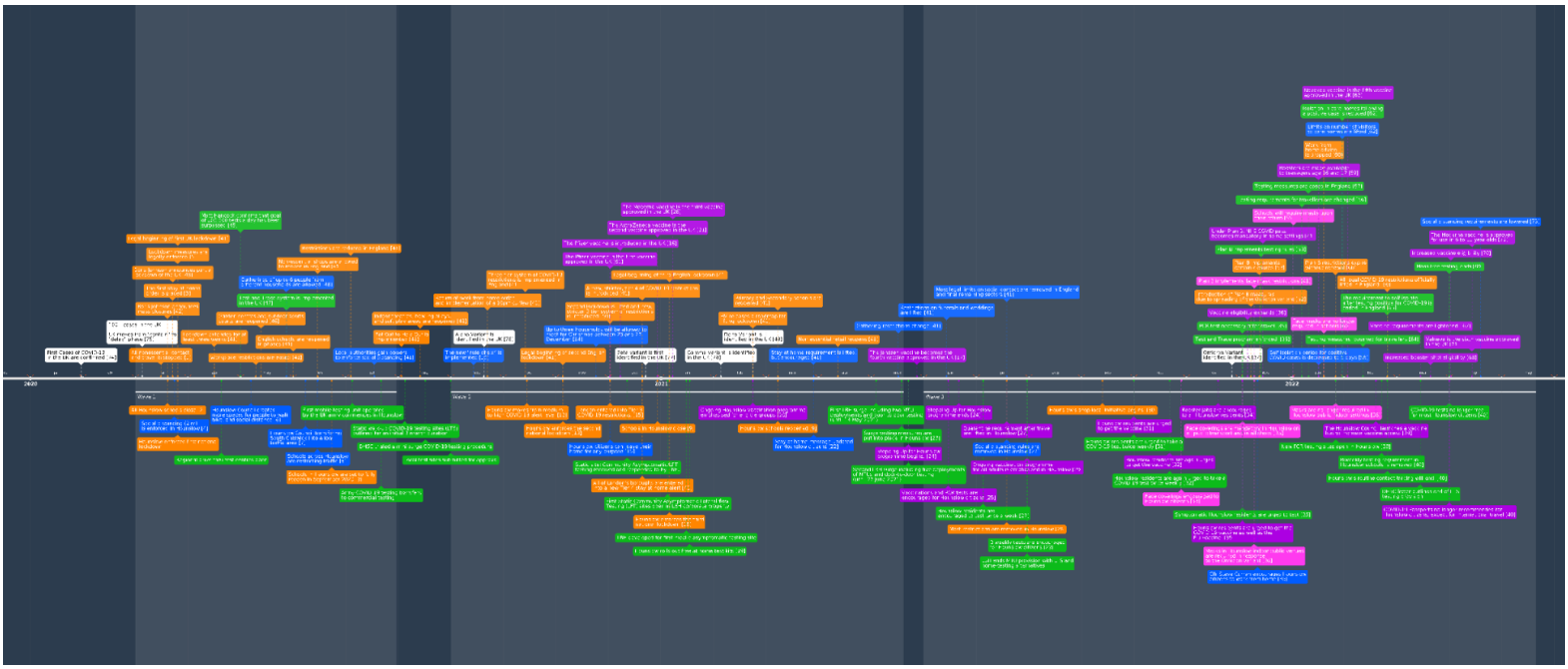
- You've read this participant information sheet and you've had the opportunity to ask any questions you might have on the study.
- Your participation is entirely voluntary, and you are free to withdraw at any time.
- This survey is entirely anonymous, and all information collected will in no way be linked to individual participants
- The Worcester Polytechnic Institute and the London Borough of Hounslow will have access to the information provided relevant to this independent research.
- Information collected may be used to support other research in the future

(side 2)

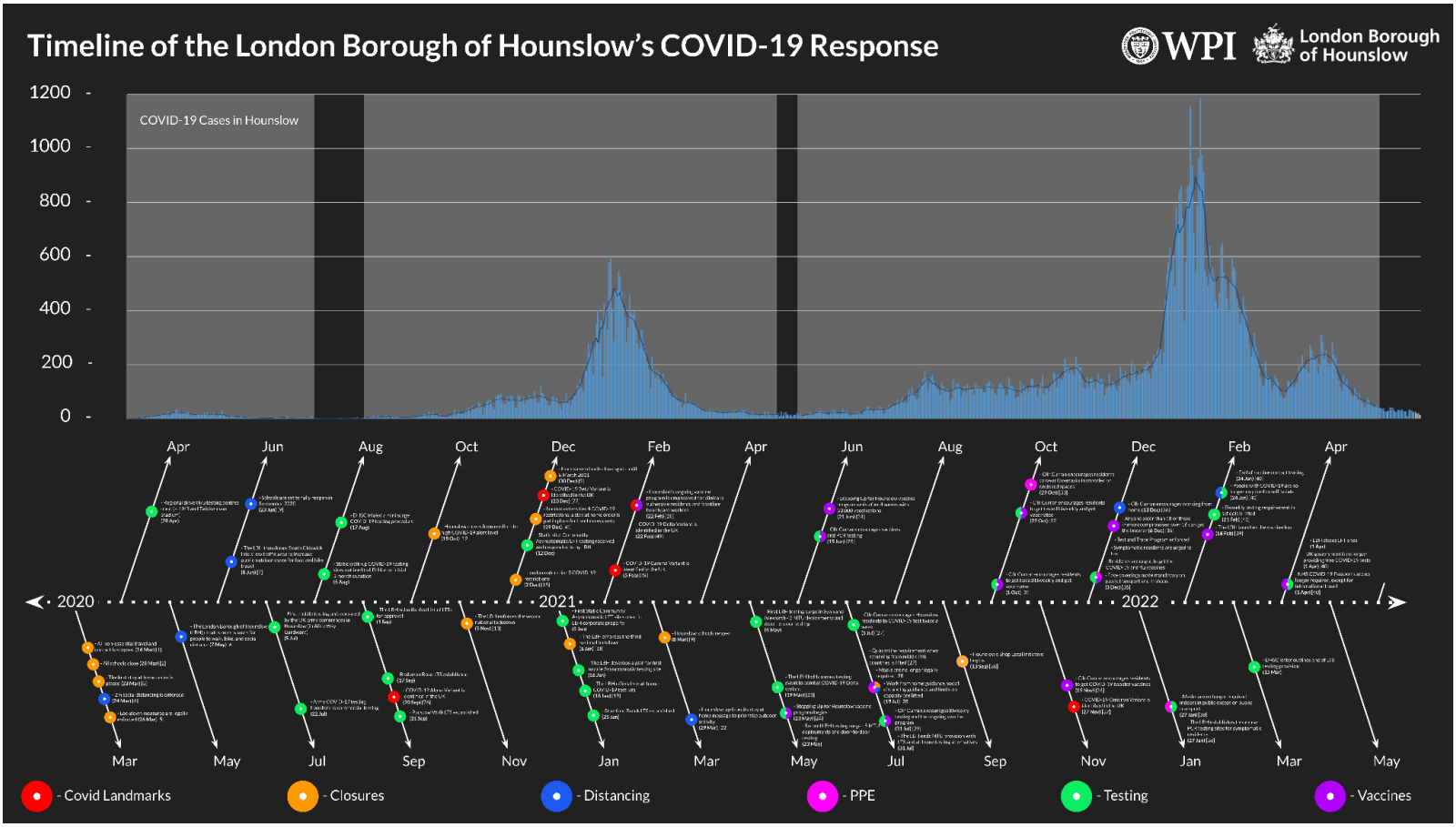
Appendix E: Final Timelines Deliverables

E.1 Comprehensive Timeline

Link to interactive access: https://time.graphics/line/660297



E.2 LBH Initiative Timeline



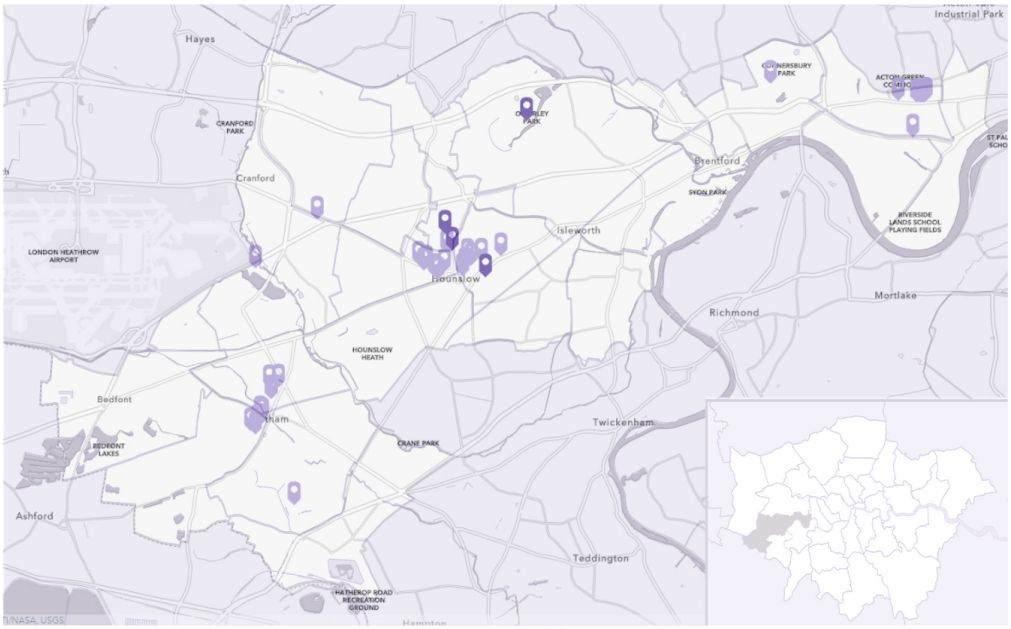
Appendix F: Average Perception of LBH Policies and Initiatives

Refer to Glossary for definitions of abbreviations used in table.

SUMMARY OF QUESTION	SUB BUCKET	TYPE	AVG.	% of Yes	Female	Male	18-35	36-65	66+	Car	No Car
Hounslow Ward?		Dropdown									
Postal Code?		S.A.									
Gender?		M.C.			54%	46%	25%	51%	25%	49%	51%
Age?		M.C.									
Employment Status?		M.C.									
Travel?		Checkbox									
Workplace Closure Effective?	Effectiveness	1-5	**3.73**	59%	3.75	3.70	3.94	3.50	4.00	3.73	3.73
Store Closure Effective?	Effectiveness	1-5	**3.81**	62%	3.92	3.68	4.06	3.41	4.35	3.85	3.76
School Closure Effective?	Effectiveness	1-5	**3.52**	51%	3.61	3.40	3.71	3.19	3.94	3.73	3.30
Social Distancing Effective?	Effectiveness	1-5	**3.72**		3.89	3.53	3.41	3.60	4.29	3.76	3.69
Mask Regulations Effective?	Effectiveness	1-5	**3.86**		4.00	3.69	3.59	3.66	4.53	4.15	3.57
PPE Accessible?	Accessibility	1-5	**4.12**		4.03	4.22	4.24	4.06	4.12	4.09	4.14
Testing Accessible?	Accessibility	1-5	**4.41**		4.16	4.69	4.47	4.40	4.35	4.35	4.46
Vaccines Accessible?	Accessibility	1-5	**4.54**		4.49	4.59	4.35	4.60	4.59	4.65	4.43
Vaccinated?		Yes/No		**90%**	89%	91%	76%	91%	100%	94%	86%
LBH Communication Effective? (Yes)		Yes/No		**61%**	59%	63%	59%	54%	76%	56%	66%
LBH Communication Effective? (Yes/Somewhat)				**91%**	95%	88%	88%	89%	100%	94%	89%
Shop Local?		Yes/No		**52%**	62%	41%	29%	60%	59%	59%	46%
Shop Local Benefit?	Benefit	1-5	**3.17**	26%	3.17	3.15	3.60	3.10	3.10	3.30	3.00
Outdoor Spaces?		Yes/No		**43%**	46%	41%	65%	40%	29%	38%	49%
Outdoor Spaces Benefit?	Benefit	1-5	**3.83**	32%	3.53	4.23	3.27	4.36	3.60	4.15	3.59
Community Testing Centers?		Yes/No		**83%**	86%	78%	76%	89%	76%	82%	83%
Testing Centers Benefit?	Benefit	1-5	**3.54**	52%	3.25	3.92	4.00	3.45	3.31	3.75	3.34
Stepping Up For Hounslow?		Yes/No		**39%**	32%	47%	53%	34%	35%	41%	37%
Stepping Up Benefit?	Benefit	1-5	**3.86**	30%	3.54	4.13	4.00	3.85	3.67	3.71	4.00
Vaccine Bus?		Yes/No		**49%**	51%	47%	53%	54%	35%	44%	54%
Vaccine Bus Benefit?	Benefit	1-5	**2.94**	22%	2.50	3.50	3.67	2.82	2.17	2.53	3.29

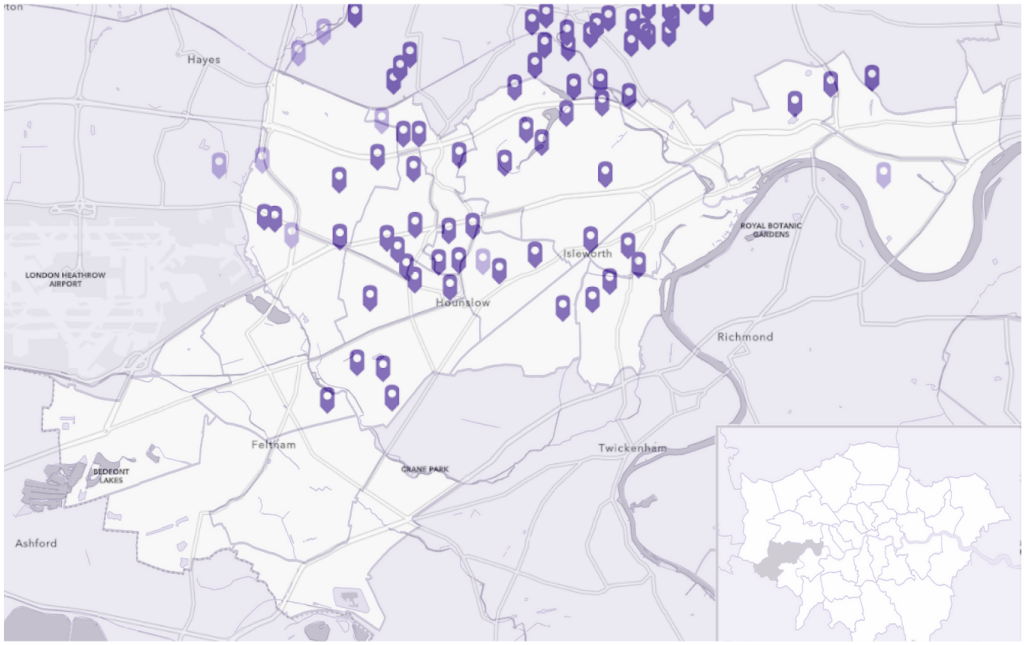
Appendix G: Maps Informing Survey Response Distribution

G.1 Map of Survey Distribution Sites



QR Code Surveys In-Person Surveying

G.2 Map of Survey Respondent Residences



QR Code Responses In-Person Responses