

From ‘herd immunity’ to ‘stay home’ to ‘stay alert’: United Kingdom’s response to COVID-19

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Abstract

The outbreak of the COVID-19 pandemic has resulted in various public health responses around the globe. Due to the devolved powers of the United Kingdom, the response has been centralized but simultaneously greatly differing across England, Wales, Scotland, and Northern Ireland. The following article examines the governmental responses to the outbreak, the public health measures taken, data collection and statistics, protective equipment and bed capacity, the society’s response, and lastly, the easing of the lockdown restrictions. In terms of the governmental response, the COVID-19 pandemic was initially met with less urgency and social distancing, along with the development of herd immunity, were first mentioned. As the virus continued to spread, the government started imposing stricter measures and a lockdown was implemented. Tests were conducted using a five pillar typology. The collection of information, particularly on COVID-19 associated deaths, varied across the United Kingdom and among the governmental organizations due to differing definitions. In term of hospital bed availability, the rate of hospitalizations was the highest from late March to early April of 2020. Temporary hospitals were constructed, however, they mostly went unused. The United Kingdom society was generally compliant in adapting to the lockdown and trust in the government rose. Nonetheless, as the lockdown progressed, trust in the government began to fall. After several months, the rate of infection decreased and the lockdown in the United Kingdom was lifted in accordance with ‘Our plan to rebuild: The United Kingdom Government’s COVID-19 recovery strategy’. The slogan ‘Stay at Home. Protect the NHS. Save Lives’ was replaced with ‘Stay Alert. Control the Virus. Save Lives’.

Key words: COVID-19 pandemic, United Kingdom, England, Scotland, Wales, Northern Ireland

Słowa kluczowe: COVID-19, Zjednoczone Królestwo, Anglia, Szkocja, Walia, Północna Irlandia

COVID-19 in the United Kingdom

By late January of 2020, the threat of COVID-19 began to be a rising concern for the United Kingdom Government. The Foreign and Commonwealth Office issued travel advice on the 22nd of January, 2020, stating that: “In light of the latest medical information, including reports of some person-to-person transmission, and the Chinese authorities’ own advice, we are now advising against all but essential travel to Wuhan” [1]. By the 25th of January, 2020, more stringent travel advice “against all travel to Hubei Province” was issued and British nationals were urged to leave, if possible [2]. On the 2nd of February, 2020, a public health campaign was launched to increase awareness on personal hygiene including using tissues to cover coughs, disposing tissues after use, washing hands, and for travellers returning from China to follow government guidelines [3].

The initial two laboratory confirmed cases of COVID-19 in the United Kingdom were recorded during the last week of January of 2020 [4]. The two patients were treated at the Hull University Teaching Hospitals [4]. By the 31st of May, 2020, there were 274,762 laboratory-confirmed COVID-19 cases in the United Kingdom with the greatest number per capita in Wales (4,636 per million), followed by England (3,888 per million), Scotland (2,819 per million), and Northern Ireland (2,490 per million) [5–10]. The first COVID-19 related death in the United Kingdom was announced on the 5th of March, 2020 [11]. At the end of May of 2020, 39,121 deaths associated with COVID-19 had been publicly confirmed in the United Kingdom with a notable proportion occurring among care home residents [12–14]. This paper examines the governmental responses to the outbreak, the public health measures undertaken, including the lockdown, data collection and statistics, protective equipment and bed capacity, the society’s response, and lastly, the easing of the lockdown restrictions.

Governmental Response in the United Kingdom

Legislative Background

Under the devolved constitutional arrangements of 1999 in the United Kingdom, health provision is handled differently by England, Scotland, Wales, and Northern Ireland [15]. Publicly funded health care services in the United Kingdom are delivered through the National Health Service (NHS): NHS England, NHS Scotland, NHS Wales, and Health and Social Care (HSC) in Northern Ireland [16]. NHS England and NHS Improvement, which joined together in 2019, provide national direction for the governance of health care, data quality, and best practice standards in England [17]. At the regional level, there are NHS England and NHS Improvement regional teams while at the local level, there are sustainability and transformation partnerships (integrated care systems in certain locations), integrated care partnerships, and primary care networks of which there are about 1,300 [17]. Aside from this, Public Health England is the agency re-

sponsible for population health and wellbeing [18]. Next, NHS Scotland is comprised of fourteen NHS Boards, seven Special NHS Boards, and a public health body called Public Health Scotland [19]. NHS Wales is divided into seven Local Health Boards and 3 NHS Trusts, including Public Health Wales [20]. Northern Ireland has six HSC Trusts – five geographically based Trusts and the Northern Ireland Ambulance Service [21]. Similar to its counter parts across the United Kingdom, Northern Ireland also has a Public Health Agency [21]. In total, the United Kingdom has four Chief Medical Officers and Deputy Chief Medical Officers, who act in an advisory role to the governments [22].

Response in the United Kingdom

The Department of Health and Social Care has taken the lead in the governmental response to COVID-19, acting in its role as the overseer of the United Kingdom’s “health and care framework” [23]. The justifications for the direction of the response have come primarily from the Scientific Advisory Group for Emergencies (SAGE), an advisory body which met for the first time in relation to COVID-19 on the 22nd of January, 2020 [24, 25]. SAGE’s remit is ensuring “timely and coordinated scientific advice is made available to decision makers to support UK cross-government decisions in the Cabinet Office Briefing Room (COBR)” [24]. In order to provide the most comprehensive understanding of the situation, SAGE considers advice and information from a range of sub-groups, including the Scientific Pandemic Influenza Group on Modelling (SPI-M) and the Independent Scientific Pandemic Influenza Group on Behaviours (SPI-B) [24]. It also receives information from the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG), Health Data Research UK (HDR UK), COVID-19 Genomics UK (COG-UK), the Public Health England (PHE) Serology Working Group, the COVID-19 Clinical Information Network (CO-CIN), the Environmental Working Group, the Children’s Task and Finish Working Group, and the Hospital Onset COVID-19 Working Group [24, 26]. During the COVID-19 pandemic, Sir Patrick Vallance, the United Kingdom Government’s Chief Scientific Adviser, chairs SAGE with Professor Chris Whitty, the Chief Medical Officer for England [24]. SAGE also includes representation from government, academia, and health care professionals [24].

COBR first met on the 24th of January, 2020, to discuss the coronavirus outbreak [27]. Following the meeting, Professor Whitty released a statement indicating that the United Kingdom Chief Medical Officers were working together on monitoring the situation and implementing response measures [27]. It was noted that no cases of COVID-19 had been identified and that the risk to the public remained low [27]. Furthermore, it was announced that Heathrow Airport would have a public health hub established with health care professionals and public health authorities present [27]. On the 30th of January, 2020, the four United Kingdom Chief Medical Officers released a joint statement, calling on the governments to increase

their planning activities due to the growing number of cases of COVID-19 in China [16]. Furthermore, advice was given to escalate the United Kingdom risk level to moderate [16]. The Scientific Pandemic Influenza Group on Modelling's consensus statement for SAGE from the 2nd of March, 2020, indicated that there was "likely sustained transmission of coronavirus in the UK" [28].

Coronavirus Action Plan

On the 3rd of March, 2020, the government of the United Kingdom published the policy paper, *Coronavirus action plan: a guide to what you can expect across the United Kingdom* [29], and also held a press conference which lasted over 40 minutes with the Prime Minister, Boris Johnson, Professor Christopher Witty, and Sir Patrick Valance [30]. The public was warned by the Prime Minister: "it is highly likely that we will see a growing number of United Kingdom cases. And that's why keeping the country safe is the government's overriding priority" [31]. The public was also assured, "let's not forget – we already have a fantastic NHS, fantastic testing systems and fantastic surveillance of the spread of disease" [31]. Furthermore, he stated, "our country remains extremely well prepared, as it has been since the outbreak began in Wuhan several months ago" [31]. Viewers were encouraged, repeatedly, to wash their hands with soap and hot water for the duration of the song, *Happy Birthday*, two times [31]. The initial press conference was well received and would mark a beginning of a period of growth in popular support, which will be explored in the section 'Society's Response and Government Approval'.

The *Coronavirus action plan* was authored by the Department of Health and Social Care (England), Department of Health/An Roinn Sláinte/Máinnistrie O Poustie (Northern Ireland), the Scottish Government/Riaghaltas na h-Alba, and Llywodraeth Cymru/Welsh Government [29]. During the press conference that followed, the Prime Minister stated, "the plan does not set out what the government will do, but sets out the steps that the government could take, at the right time, and on the basis of the scientific advice" [29]. The *Coronavirus action plan* consisted of four phases: *Contain, Delay, Research, and Mitigate* [29]. The phased response was planned to be flexible to account for the severity of the pandemic (e.g., mild pandemic like the H1N1 outbreak of 2009, severe pandemic like the Spanish Flu of 1918) [29]. The *Coronavirus action plan* stated that the "United Kingdom Government will also step up the central co-ordination of its overall response using its proven crisis management mechanisms" [29]. The Ministry of National Defense had taken "plans to ensure the delivery of its key operations in the United Kingdom and overseas" and also had arrangements to support civil authorities [29].

The first stage, *Contain*, was centred around detecting and tracing early cases [29]. It included "actions that people can take themselves", such as the promotion of the personal hygiene campaign: "catch it, bin it, kill it" [29]. The *Delay* phase included ensuring that "the outbreak can be delayed until the warmer months... [and reducing] the

risk of [COVID-19] overlapping with [the] seasonal flu and [avoiding] other challenges (societal or medical) that the colder months bring" [29]. This includes the consideration of additional actions to slow the transmission of COVID-19. As an example, it was acknowledged that the holiday school closures in 2009 reduced the spread of the H1N1 virus [29]. Next, the *Research* phase was focused on expanding research capabilities, such as donating 20 million GBP to the Coalition for Epidemic Preparedness Innovations (CEPI) and 20 million GBP for a joint call of the United Kingdom Research Institute and the National Institute for Health Research (funded by the Department of Health and Social Care) [29]. The last phase, *Mitigate*, included a "less[ened] emphasis on large scale preventative measures such as intensive contact tracing" [29]. It was noted that such measures may become less effective when COVID-19 is an established disease and at that point, resources may be directed to other areas, such as increasing access to treatment and the provision of essential health care services [29].

Public Health Measures and Lockdown

Throughout February of 2020 and early March of 2020, the Scientific Pandemic Influenza Group on Modelling and the Scientific Pandemic Influenza Group on Behaviours prepared papers and consensus statements for SAGE on the effects of public health measures (e.g., restrictions on public gatherings, self-isolation) on the spread of COVID-19, disruption to daily life, and public disorder risk [32–34]. In order to reduce the transmission of COVID-19 in the United Kingdom, gradually increasing public health measures were announced by the government. On the 13th of March, 2020, the government's mitigation plan was to: "try and reduce the peak, broaden the peak, not suppress it completely. Also, because the vast majority of people get a mild illness, to build up some kind of herd immunity so more people are immune to this disease." [35]. On the 16th of March, 2020, the Prime Minister held a press conference and stated: "Last week we asked everyone to stay at home if you had one of two symptoms: high temperature or a new continuous cough. Today we need to go further... now is the time for everyone to stop non-essential contact with others and to stop all unnecessary travel." [36]. During the SAGE meeting on the 18th of March, 2020, large-scale social distancing measures and a potential lockdown of London, England, were discussed [34]. On the 20th of March, 2020, the slogan, 'Stay Home. Protect the NHS. Save Lives', first appeared with the Prime Minister's announcement of the closure of restaurants, cafes, and pubs [37].

At the SAGE meeting on the 23rd of March, 2020, the paper, *Options for increasing social distancing measures*, was reviewed [38]. It presented information on shielding for individuals who were at a higher risk for infection, as well as population social distancing measures [38]. It included the suggestion that "consideration should be given to enacting legislation, with community involvement, to compel key social distancing measures" [38]. On the evening of the 23rd of March, 2020, the full

United Kingdom lockdown was announced by the Prime Minister: “From this evening I must give the British people a very simple instruction – you must stay at home” [39]. Movement was only allowed for the purchasing of basic necessities, one form of daily exercise, medical needs, and travelling to work “only where this is absolutely necessary and cannot be done from home” [39]. The sanctions covered the closure of non-essential businesses and services, the dispersion of gatherings, and the stopping of all mass events like concerts, weddings, and organized parties [39].

On the 25th of March, 2020, the *Coronavirus Act 2020* became law, giving the government in the United Kingdom emergency powers, which could be used during the COVID-19 pandemic following guidance from the Chief Medical Officer [40, 41]. In particular, the *Coronavirus Act 2020* addressed five areas: processes to expand health and social care human resources; decreases in the administrative burden on frontline workers; public health measures and quarantine powers to reduce the transmission of the virus; changes to the death management system; and supports for workers and the food industry [41, 42]. Between the 26th and the 28th of March, 2020, the four governments in the United Kingdom introduced “lockdown laws” (*Health Protection (Coronavirus, Restrictions) Regulations 2020*) [43]. The laws enforced lockdown measures by limiting the movement of the population, closing non-essential businesses, and giving the police the ability to enforce the laws [43].

Governmental Response in the Devolved States

Response in Scotland

In response to the World Health Organisation’s pandemic declaration on the 11th of March, 2020, Scotland announced official advice for household quarantines on the 16th of March, 2020, followed by the closure of all schools on the 20th of March, 2020 [44]. Further to this, the Scottish Government COVID-19 Advisory Group was formed with the first meeting held on the 26th of March, 2020, which allowed for close communication between SAGE, public health experts, and Scottish Ministers [45]. The following day, *The Health Protection (Coronavirus) (Restrictions) (Scotland) Regulations 2020* was enacted, which required the closure of venues and the dispersal of large public gatherings with the police having the power to enforce the law [46, 47]. Scotland followed suit with Westminster by announcing lockdown measures on the 23rd of March, 2020 [44]. Ahead of any announcement from the United Kingdom, Scotland was the first country among the four nations to implement a mandatory face covering rule in shops, effective from the 10th of July, 2020 [48].

Response in Wales

In terms of the COVID-19 response, the Welsh Government established the Technical Advisory Group within the Health and Social Services Group to provide technical

and scientific information related to the pandemic [49]. The group applies information from SAGE and other advisory groups to a Welsh context, as well as assists with the United Kingdom-wide response to the pandemic. It draws upon the work of a collection of subgroups reporting on a range of issues, including outbreak monitoring and policy modelling [49]. The Technical Advisory Cell includes the chairs of the subgroups and other members who provide recommendations on COVID-19 evidence to the Health and Social Services Group’s Director General and the Chief Medical Officer [49]. On the 26th of March, *The Health Protection (Coronavirus Restrictions) (Wales) Regulations 2020* came into effect, giving the government the power to enforce the lockdown measures [50].

Response in Northern Ireland

On the 28th of March, 2020, *The Health Protection (Coronavirus, Restrictions) Regulations (Northern Ireland) 2020* was implemented [51]. In cooperation with the United Kingdom Government, the Northern Ireland Executive has led the COVID-19 response efforts [52]. On the 31st of March, 2020, the *Ad Hoc Committee on the COVID-19 Response* was established by the Northern Ireland Assembly [52]. Furthermore, the *Coronavirus Executive Approach to Decision-Making* document from the Northern Ireland Executive emphasized, “working closely both on a four nations basis within the United Kingdom and on a North/South basis with the Irish Government” [53]. The aim of the document was to facilitate a close working relationship between the Chief Medical Officers of the other United Kingdom devolved administrations and the United Kingdom Government, particularly on information relating directly to COVID-19 [53]. Northern Ireland’s proximity to the Republic of Ireland required a different approach. Where the other governments co-operated solely as partners in one state, the Irish land border required interaction with a different state. This was underlined in the Memorandum of Understanding (*COVID-19 Response – Public Health Cooperation on an All-Ireland Basis*) between the Chief Medical Officer of Northern Ireland and the Chief Medical Officer of the Republic of Ireland [54]. It was announced in the document that the signatories would cooperate along the lines of previously “existing and long-standing cooperation” [54].

Data Collection and Statistics

Testing

On the 10th of February, 2020, the Public Health England diagnostic test for COVID-19 was launched [55]. At the time, there was one laboratory in London, England, processing around 100 samples per day [55]. Following this, eleven additional laboratories were opened across the United Kingdom to increase capacity to 1,000 tests per day [55]. By mid-April of 2020, laboratory capacity increased to 25,000 samples per day [56]. On the 30th of May, 2020, testing capacity exceeded 200,000 tests per

day [57]. The following day, the NHS Test and Trace service was launched by the Government with 25,000 staff available to undertake contact tracing of individuals who tested positive for COVID-19 [58]. Within a month of operation, the NHS Test and Trace service worked with 113,925 contacts of cases [59].

In March of 2020, the first drive through testing centre was created in Nottingham [59]. As of the 26th of June, 2020, there were 68 drive through testing centres in the United Kingdom, 6 walk-through centres in England, and 147 mobile units served by military personnel (England, Scotland, Wales) or civilians (Northern Ireland) [59]. Through the COVID Support Force, the military ran mobile testing units across the United Kingdom, which were attended by 310,633 individuals as of the end of May of 2020 [60]. By the end of July of 2020, it was announced that there would be an expansion to 236 mobile testing units across the country [59]. Home testing was also expanded with specialized priority boxes set up to collect samples [59]. Furthermore, on the 23rd of April, 2020, the Department for Health and Social Care and the Office for National Statistics, along with academic and industry partners, announced a plan to test 300,000 people over a year for surveillance purposes [61].

As of the 7th of June, 2020, the total number of tests conducted in the United Kingdom amounted to 5,581,073, representing 83,553 tests per million residents [10, 62]. The number of tests conducted on the 6th of June, 2020, was 142,123 tests [62]. There are five typologies ('pillars') of tests conducted, each with its own purpose and methodology. The first pillar includes swab tests conducted by NHS hospitals and Public Health England labs for individuals deemed to have a clinical reason for testing, as well as for individuals working in the health care sector (1,924,659 tests by the 7th of June, 2020) [62–64]. The second pillar, totalling 3,059,225 tests, is a swab testing of key workers and vulnerable members of the general population, which is provided by commercial partners [62–64]. At 303,264 completed tests, the third pillar includes serology testing revealing antibodies, which is provided by NHS England and NHS Improvement [62–64]. The fourth pillar, amounting to 293,925 completed tests, is also another serology test sourced by the NHS, Public Health England, and academic partners, in an effort to conduct surveillance in the population [62–64]. The fifth pillar represents the creation of mass-testing through a "National Effort for testing" [64].

Deaths

As of the 7th of June, 2020, there have been 40,631 COVID-19 associated deaths in the United Kingdom among individuals who tested positive for COVID-19: 36,281 in England, 2,415 in Scotland, 1,398 in Wales, and 537 in Northern Ireland [65]. Per 1,000,000 people, the numbers by nation are: 645 in England, 442 in Scotland, 443 in Wales, and 284 in Northern Ireland [10, 65]. Based on the deaths occurring until the end of May of 2020 in England and Wales, males were more affected than females [66]. Of the deceased individuals, 91% had

one or more pre-existing conditions [66]. Dementia and Alzheimer Disease were the most frequent conditions in 26% of the deaths [66]. In the month of May of 2020, COVID-19 was the most common cause of death in the population accounting for 22% of all deaths, down from 36% in April of 2020 [66]. During the week of the 25th of May, 2020, the majority of COVID-19 related deaths in Scotland occurred in care homes [67].

The United Kingdom Government Department of Health and Social Care has been providing daily counts of COVID-19 associated deaths for the United Kingdom [68]. As of the 29th of April, 2020, the data represent deaths among individuals who tested positive for COVID-19, regardless of the location of the deaths [68]. The data come from Public Health England, Health Protection Scotland, Public Health Wales, and Public Health Agency (Northern Ireland) [68]. From the 28th of April, 2020, there was a change in the reporting to include deaths where there was no positive COVID-19 testing result, however, the death certificate included COVID-19 as a cause of death [69]. There is a lag between the date of the reporting of the death and the date of death due to the time it takes to receive confirmation of a positive COVID-19 test result or time to issue the death certificate [69].

In England, death reporting is collated by NHS England and NHS Improvement [69]. For deaths in hospital, NHS trusts inform NHS England through the COVID-19 Patient Notification System [68]. For deaths occurring during outbreaks among individuals with confirmed COVID-19, Public Health England Health Protection Teams are notified and the data are submitted to an electronic reporting system [68]. Lastly, death information in the Demographic Batch Service is cross-referenced with the Second Generation Surveillance System, which includes individuals who had tested positive for COVID-19 [68]. The Office for National Statistics, which publishes data for COVID-19 related deaths in England and Wales, uses a broader definition and includes deaths in all settings, as well as those that were not laboratory confirmed to be COVID-19 positive [7, 69].

In Scotland, there are two measures for documenting the number of deaths. Firstly, Health Protection Scotland provides the Scottish Government with the number of people who died within 28 days of testing positive for COVID-19 [70]. This variable is comparable to the numbers provided by the Department for Health and Social Care for the four nations [70]. Secondly, National Records of Scotland collates reports of individual deaths where COVID-19 was specified on the death certificate as a contributing cause of death, including suspected and probable cases of COVID-19 [70]. Furthermore, deaths reported by Public Health Wales include those where the deceased tested positive for COVID-19 and the clinician certifying the death believed this to be a contributing factor in the death [7]. Only deaths that occurred within the hospital or among care home residents are captured in this statistic [7]. As previously mentioned, death statistics with a broader definition are published by the Office for National Statistics for Wales [7, 69].

In Northern Ireland, the Registration System of the Northern Ireland General Register Office records all deaths, which are then processed by the Vital Statistics Unit of the Northern Ireland Statistics and Research Agency [71]. There are multiple ways of defining the deaths. The Department of Health in the Northern Ireland Government provides daily information on deaths conveyed by the health trusts [71]. These are reported if the deceased individual died within 28 days of testing positive for COVID-19 with the cause of death not necessarily needing to be due to COVID-19 [71]. This definition is closer to the daily figures used in other parts of the United Kingdom [71]. Another method of classifying the deaths is according to the Northern Ireland Statistics and Research Agency statistics compiled from information received by the General Register Office, which include deaths within and outside of the hospital [71]. This count captures deaths where COVID-19 was listed on the death certificate, including cases of suspected or probable disease [71]. It is similar to the statistics provided by National Records Scotland and the Office for National Statistics [71].

Of note, due to the aforementioned differences in defining deaths associated with COVID-19, the resulting values vary greatly. For example, in Scotland, 2,415 deaths related to COVID-19 were recorded up to the 7th of June, 2020, based on the information from Health Protection Scotland [65]. However, the death count based on the National Records of Scotland data was at 4,000 during the same time period [72]. Similarly, the figures from the Northern Ireland Statistics and Research Agency showed the death count to be 779 people as of the 5th of June, 2020, in Northern Ireland. In contrast, the death count from the Department of Health for the same period was 537 people [71].

Personal Protective Equipment and Hospital Capacity

Personal Protective Equipment

Prior to the COVID-19 pandemic, the United Kingdom government reserved a national stockpile of personal protective equipment in preparation for an influenza pandemic [73]. The stockpile was to cover health care workers in the event of half of the population being ill [73]. In response to the recent outbreak, the United Kingdom government has worked to get this critical equipment to almost 58,000 health care settings [73]. To address emergency requests of personal protective equipment, a national supply disruption response system was set up [73]. Up to mid-April of 2020, around 761 million pieces of personal protective equipment, including masks (158 million), gowns (1 million), aprons (135 million), and gloves (360 million) were distributed across the United Kingdom [73]. However, there were reports that the government failed to compile sufficient amounts of personal protective equipment for medical staff within its stockpile, which was established in 2009 [74].

Hospital Capacity

During the period of January to March of 2020, the average daily number of beds open overnight was 128,935 with an occupancy rate of 86% within NHS England [75]. The two largest organisations for overnight beds in England were University Hospitals Birmingham (2,638 beds) and Manchester University (2,100 beds) [75]. In Scotland, there was an average of 13,194 inpatient beds with an occupancy rate of 88% during the period of October to December of 2019 [76]. During the 2018–2019 year, there were an average of 10,564 beds in NHS Wales organisations with an occupancy rate of 87% [77], while in Northern Ireland, there were an average of 5,830 beds with an occupancy rate of 84% [78].

In order to deal with anticipated influxes of COVID-19 patients requiring inpatient care, the number of available beds was increased across the United Kingdom through more discharges, the cancellation of certain elective services, and the creation of additional beds in novel facilities [79]. In mid-April of 2020, hospital occupancy was at 59% in NHS hospitals, representing about 37,500 available beds [79]. Temporary NHS Nightingale Hospitals were constructed or planned to be constructed in arenas and conference venues in London, Manchester, Harrogate, Birmingham, Washington, Bristol, Exeter, Glasgow, and Belfast [80]. The hospitals were to have a combined bed capacity of 13,000 [81, 82]. The largest of the hospitals was the NHS Nightingale Hospital London, which was opened by Prince Charles on the 3rd of April, 2020 [80]. The London Nightingale hospital had a capacity of 500 beds with room for up to 3,500 beds [80]. As of early May of 2020, all of the Nightingale hospitals have been placed on standby or retrofitted to serve as diagnostic or imaging clinics as their bed occupancy was low [81, 83].

As of the 29th of May, 2020, 10% of hospital beds with mechanical ventilation were occupied by COVID-19 patients in the United Kingdom [84]. This represented a decrease over the preceding months when mechanical ventilator bed occupancy was greater than 25% in England, Wales, Scotland, and Northern Ireland from late March to early April of 2020 [84]. Between the 1st of March, 2020, to the 20th of June, 2020, there were 537 intensive care admissions in Scotland among patients confirmed to have COVID-19 with the peak number of admissions on the 29th of March, 2020 [76]. For four weeks from the 31st of March, 2020, intensive care unit bed capacity was 45% higher than baseline capacity, however, it did not exceed the available bed capacity [76]. Daily COVID-19-related admissions in England peaked during this time period with over 2,000 hospitalizations occurring per day [84]. As of the 28th of May, 2020, daily admissions were at 562 [84]. Across the United Kingdom, 7,945 patients with COVID-19 were hospitalized on the 28th of May, 2020, which represented a significant decrease from 9,383 hospitalized patients during the previous week [84].

The Northern Ireland Executive Department of Health and the Northern Ireland Statistics and Research

Agency released a report comparing admissions to HSC Trust Hospitals between 2019 and 2020 during the period of the 9th of March to the 17th of April [85]. In terms of admissions, these decreased by 52% from 47,780 in 2019 to 22,900 in 2020 [85]. The greatest decreases in admissions were seen among the specialties of gastroenterology (71%), general medicine (63%), and general surgery (62%) [85]. Day case admission decreased by 45% from 2019 to 2020, representing a reduction from 35,549 to 19,645 admissions [85].

Society's Response and Government Approval

Between the 14th and 16th of March, 2020, prior to the announcement of the United Kingdom's lockdown, YouGov opinion polling found the society to be roughly equally distributed in terms of support for the government [86]. Overall, 39% of respondents in the opinion poll approved "the Government's record to date", while 35% disapproved of the government's record [86]. From late June of 2019 until the week prior to the announcement of the lockdown, the amount of individuals who disapproved of the government had fallen from 71% to 35% [86]. Shortly after the announcement of the United Kingdom lockdown, approval of the government surged to 52% (21st to 23rd of March, 2020) [86]. Disapproval of the government fell to 27% [86]. Following this, it can be observed that a considerable shift in public approval was present between the 2nd to 3rd of May, 2020, and the 6th to 8th of June, 2020, as the approval rating decreased from a successive lead (49% approve versus 30% disapprove) to an almost inversion of popularity (32% approve versus 49% disapprove) [86].

It is possible that public opinion may have changed following a series of events, such as a politician breaking official lockdown rules [87] and the public receiving vague guidelines for the end of the lockdown [88]. According to research conducted by the Reuters Institute, the percentage of surveyed people who considered the government trustworthy dropped from 67% to 48% between mid-April of 2020 and late May of 2020 [89]. After the official acknowledgment of the Prime Minister's Chief Adviser breaking lockdown advice [87], it was shown that a fifth of the people surveyed by YouGov had followed the government guidelines less strictly and this may have played a key role in civil obedience during the lockdown [90]. Furthermore, according to a study from University College London conducted in mid-May of 2020, more than half of younger adults did not strictly follow the government guidelines [91]. Around the same time period, it was reported that planned anti-lockdown protests were due to emerge in 60 locations United Kingdom-wide on the 16th of May, 2020 [92]. However, the largest anti-lockdown gathering appeared to have occurred in Speakers' Corner in London with about 100 people attending [93]. At the end of May of 2020, Simon Dolan, an entrepreneur, raised awareness about a crowd-funded legal challenge against the lockdown implemented by the government [94, 95]. The organisers claimed that it was due to their demands that the government released

SAGE meeting minutes [94]. The legal challenge raised over 200,000 GBP but was denied a judicial review by a High Court [95].

Despite the government's approval decline, it is still the general consensus, according to YouGov, that the United Kingdom public believes that the lockdown was beneficial: 69% agreeing versus 17% disagreeing [96]. Further to this, from the 10th of May to the 23rd of June, 2020, the public's attitude towards the pace of the lockdown became more positive, increasing from 35% of respondents thinking that "the balance is about right" to 47% of respondents, based on results from YouGov [97]. The vast majority of the public (83%) would support a second lockdown if cases spiked, according to polling conducted in late June of 2020 [98].

During the lockdown, the Teenage Cancer Trust launched the "#BestToCheck" campaign educating young people on five common signs of cancer [99–101]. The charity advised, "During the coronavirus crisis, it's still really important to call your GP if you're worried about any of these symptoms" [101]. In May, Clear Channel United Kingdom supported the charity by distributing the campaign's posters on the company's extensive bus shelter advertising panels across the United Kingdom [99].

Easing of the Lockdown in the United Kingdom

COVID-19 Alert System

On the 10th of May, 2020, the Prime Minister addressed the nation regarding taking steps to ease the lockdown in the United Kingdom [102]. The slogan, 'Stay Home. Protect the NHS. Save Lives' was changed to 'Stay Alert. Control the Virus. Save Lives' [103].

In order to achieve the easing of the lockdown, monitoring of the spread of the virus was mentioned to be an essential factor [102]. The Joint Biosecurity Centre was announced, which would administer a COVID Alert System consisting of five levels that would be determined by the number of infections and the R (reproduction rate) of COVID-19:

- Level 1: would be reached when COVID-19 no longer exists in the United Kingdom with international monitoring to be undertaken;
- Level 2: describes low virus transmission with case tracing and minimal social distancing;
- Level 3: specifies that the virus is in circulation but some restrictions can be lifted;
- Level 4: indicates that there is high or exponential virus transmission with the need for social distancing; and
- Level 5: specifies a situation where the number of infections could overwhelm the health care system with the need for a lockdown [104].

United Kingdom

In the report, *Our plan to rebuild: The United Kingdom Government's COVID-19 recovery strategy*, published on the 11th of May, 2020, a three step model was intro-

duced to ease the lockdown, dependent on the progress indicated by the COVID-19 Alert System [105]. The document provided proposed dates for the introduction of the phases in England and noted that due to the scale of the COVID-19 pandemic differing across the United Kingdom, the plan was to act as a guideline alongside the requirements for public health and safety within the nations of Scotland, Wales, and Northern Ireland [105].

Step one of the plan was introduced on the 13th of May, 2020, and it involves the easing of some measures, such as being able to go back to work where working from home is impossible [105]. It allows residents to spend time outdoors, including exercise as often as desired [105]. However, a safe distance of two metres is emphasised at any time and only occupants of one other household can meet [105]. Public transport is to be avoided, schools are to remain closed, travelling around the United Kingdom is prohibited, and a self-isolation period of two weeks is required after arriving into the United Kingdom [105].

Step two includes the opening of primary schools in smaller class sizes, reopening of non-essential businesses, reintroducing sports and cultural events with social distancing imposed, as well as reopening local public transportation routes [105]. The final step in the plan includes the reopening of some of the remaining businesses, such as personal care, hospitality, and leisure facilities [105]. These businesses would need to follow the COVID-19 Secure guidelines and the effects of the opening would be monitored by the government [105]. On the 23rd of June, 2020, the Prime Minister announced that this step would take place on the 4th of July, 2020, thereby easing the lockdown in England [106].

As mentioned in the plan, the timing for the lifting of the restrictions could vary by nation, taking into consideration the local epidemiological situations [105]. Nonetheless, it was emphasised that a coordinated approach would be ensured:

The United Kingdom Government will work in close cooperation with the devolved administrations in Scotland, Wales and Northern Ireland to make this a United Kingdom-wide response: coherent, coordinated and comprehensive. Part of that United Kingdom wide approach will be acknowledging that the virus may be spreading at different speeds in different parts of the United Kingdom.

In order to remove the lockdown restrictions, the four governments in the United Kingdom amended (Scotland, Northern Ireland) or replaced (England, Wales) their respective *Health Protection (Coronavirus, Restrictions) Regulations 2020*, as of July of 2020 [43].

Easing of the Lockdown in the Devolved States

Each of the four nations have published plans describing the steps involved in the lifting of the lockdown [107]. Although the nations have taken a collective approach to easing of the lockdown, the respective governments have retained decision making abilities over the timing of the movement between phases based on their local infection rates and other circumstances [107]. Overall, the initial

lifting of the lockdown measures has been carried out at a slower pace in Scotland, Wales, and Northern Ireland in comparison to England [108].

The Scottish Government announced *Scotland's Route Map Through and Out of the Crisis* on the 21st of May, 2020 [107]. The document outlines a phased approach to easing restrictions, incorporating the reproduction rate and the World Health Organisation's six key criteria to inform the timing of the progression from the lockdown to each of the four phases [107]. Information for each phase was provided for: the epidemic status; criteria and conditions met for moving to the phase; protections advised; connections with family and friends; movement and transportation; educational and childcare settings; businesses and workplaces; retail and food services; sports, recreation and cultural activities; community and public services; public gatherings and special occasions; and health and social care [107].

On the 24th of April, 2020, the Welsh Government released the document, *Leading Wales out of the coronavirus pandemic: A framework for recovery*, which focuses on three pillars and four required strands [109]. The first pillar is centred around "the measures and evidence by which we will judge the current infection level and transmission rates" [109]. The second pillar focuses on examining "proposed measures to ease the current restrictions, grounded in both scientific evidence and wider social and economic impacts" [109]. The last pillar overviews the strengthening of the "public health surveillance and response system" in order to better track the virus [109]. The four response strands are: enhancing surveillance, identifying cases and tracking contacts, learning from other jurisdictions and engaging with communities [109].

The Northern Ireland Executive published its recovery plan entitled, *Coronavirus: Our approach to decision-making*, on the 12th of May, 2020 [110]. The plan features the slogan, "we all must do it to get through it: stay home, keep distance, wash hands" [110]. The plan stresses that, "relaxation of the current restrictions will be led by science and not by the calendar" [110]. Restrictions will be eased using three major criteria: "evidence and analysis, including latest medical [and] scientific advice", "capacity of the health and social care services", and lastly, the "assessment of the wider health, societal and economic impacts" [110]. When altering any of the restrictions, the Executive will examine five guiding principles: controlling transmission, protecting health care capacity, necessity, proportionality, and reliance on the evidence [110]. The plan also outlines five different steps of loosened restrictions for six different types of categories (work; retail; education; travel; family and community; sport, cultural and leisure activities) [110].

Conclusion

The United Kingdom Government and the devolved administrations have all held regular cabinet discussions over the course of the COVID-19 pandemic, during which actions to restrict the spread of the virus have been considered. England, Scotland, Wales, and Northern

Ireland have created committees with a focus on overseeing the respective COVID-19 responses. The centrality of the United Kingdom Government's work in the early stages of the outbreak, especially in terms of the lockdown, allowed for a unified implementation of drastic procedures. Despite a generally homogenous response across the United Kingdom to the COVID-19 pandemic, there have been slight variations in the responses of the devolved administrations in Scotland, Wales, and North-

ern Ireland, particularly in terms of the easing of the lockdown restrictions. The increasingly divergent stances of the governments of Scotland and Wales and the Executive of Northern Ireland to the reopening of the economy, due in part to a differing epidemiological profile in the devolved administrations, can be closely examined in the coming months, together with the United Kingdom Government's approach, to determine lessons learned for possible future waves of COVID-19.

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