Media monitoring report: Social media conversations and attitudes in English in the UK towards the coronavirus disease (COVID-19) outbreak 06 to 19 April 2020

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Background

The HPRU in Immunisation, which works in partnership with Public Health England (PHE) in the area of infection control, has been requested to assist in the PHE response to the ongoing outbreak of coronavirus disease 2019 (COVID-19). Within this capacity, the Vaccine Confidence ProjectTM team was asked to conduct regular 2-week analyses and reports (starting 27 January 2020), exploring social media conversations and attitudes towards the Coronavirus outbreak, in both English and Chinese, in the UK across social media platforms (including Twitter, Facebook, Blogs, Forums, and Reviews).

This report focuses on social media conversations and attitudes in English in the UK. For social media conversations and attitudes towards the Coronavirus outbreak in Chinese in the UK see “Media monitoring report: Social media conversations and attitudes in Chinese in the UK towards the coronavirus disease (COVID-19) outbreak”.

Aim

To explore social media conversations and attitudes towards the Coronavirus outbreak in the UK across social media platforms.
Methods

Data retrieval:
A search strategy was developed to capture online conversations and attitudes towards the Coronavirus outbreak (see Appendix 1 for the Boolean search terms). We extracted the data using Meltwater®, a media intelligence system, which sources media content from a wide range of news and social media outlets worldwide. Between 20 and 22 April 2020, we launched the search query covering the previous two weeks (06 to 19 April 2020) in English, and exported data from all posts from the UK, from the Meltwater® software between 20 and 22 April 2020, into Microsoft Excel. Meltwater® collects articles, posts, comments, tweets, retweets and forum threads from a range of social media platforms including Twitter, news, blogs, forums and reviews (See Appendix 2 for the definitions of social media platforms searched). Due to limitations in Facebook’s sharing permissions with Meltwater®, Facebook does not provide information about geographical locations whilst the other platforms do. Since we are extracting data geotagged to the UK, this automatically excludes Facebook posts. However, when looking at global trends between 27 January and 05 April 2020, only 2.8% of all conversations related to the coronavirus outbreak in English on Meltwater® came from Facebook.

Analysis:
A top-level analysis was performed with the social analytics algorithms within Meltwater®, which were used to perform keyword and entity analysis of mentions with the highest levels of engagement, as well as to measure the volume and sentiment of mentions per social media platform. A “mention” is a measure of how many times a term, name or specific topic has been mentioned on social media channels (see Appendix 3 for full definition of mentions). We also analysed awareness of and sentiment towards preventive behaviours and accessing of health services (see Appendix 4 for the list of behaviours and their search terms).

The sentiment analysis shows the overall tonality of mentions. Sentiment is derived from Meltwater’s natural language processing algorithms. The sentiment of a mention will either be rated Positive, Neutral, Negative or Not Rated. A mention will be labelled as Not Rated if it does not have enough text to analyse sentiment. The emotional comparison is also automated and shows how many mentions in the results express a specific emotion. This differs from sentiment analysis, as the emotional comparison is based on specific keywords, phrases, and emojis and includes negation (keywords that will not be matched). E.g. "I love this" vs "This made me sad".

Ethics:
Since the data analysed was fully in the public domain, no ethical review was necessary. Please note, sharing data from individual users who are not public organisations/entities on Twitter is restricted due to API access limits and GDPR privacy laws. Because of this, we have not included screenshots of direct tweets or posts by individuals, quotes from individuals, or names of users who are not public figures.
Key insights

Continuous decrease in volume of social media conversations
The trend of decreasing volumes of social media conversations noted in the previous media monitoring report is continuing, with 31% less mentions between 06 and 19 April 2020 compared to 23 March and 05 April 2020.

Calls for more Personal Protective Equipment for frontline workers
As during the previous period, there were many calls for more Personal Protective Equipment (PPE) for frontline workers. Many social media users shared content alleging that the government had failed to take up offers of PPE by both the EU and British companies.

Criticism of official statistics and high UK death toll
There were many posts commenting on the high death toll in the UK compared to other high-income countries. Mentions of NHS staff dying from coronavirus, which were often perceived to be linked to lack of suitable PPE, were also common. Many individuals also questioned the official government statistics on death tolls as these did not include deaths at home or in care homes.

Concerns around preventative behaviours
Interest in preventative behaviours and accessing of health services continued to decrease. Some of the most common themes and concerns around preventative behaviours were that the government was not imposing enough public health control measures, or was imposing them too late, as well as scepticism of whether the government was putting adequate measures in place to stop the further spread of coronavirus.

Piers Morgan as emerging critical voice
Tweets by the broadcaster Piers Morgan, which have been some of the most engaged with posts for several weeks, are becoming increasingly prominent. Piers Morgan posted 177 tweets over the latest two-week period, most of which voiced strong criticisms of the UK government’s handling of the coronavirus situation.

Other prominent topics of conversation
Some of the other most prominent topics of conversation were reports of the Prime Minister Boris Johnson contracting Covid-19 and being treated in intensive care, calls for more coronavirus tests, and individuals urging others to follow social distancing measures and other public health advice.

Social analytics
The main emotion being expressed was love (219.1k), followed by sadness (153.3k). Some of the most common hashtags were #stop, #NHS, #StayHomeSaveLives, #lockdown and #PPE. The majority of content was classed as negative (44%) or neutral (40%) with only 7% classed as positive, which represents similar levels to previous monitoring periods. The top twitter authors continue to be news outlets such as the BBC, football clubs and public figures (the latter two largely due to high numbers of followers rather than high numbers of posts).
Conversations about the coronavirus outbreak

There were a total of 7.54M mentions around the coronavirus outbreak on social media, in the UK in English, between 06 and 19 April 2020, representing a 31% decrease to the previous two-week monitoring period. The majority of mentions in this time period (6.57M, 87.1%) came from Twitter. The number of mentions varied over time (see Figure 1).

Figure 1. Number of mentions around the coronavirus outbreak in English on social media in the UK between 27 January and 19 April 2020, over time by source

Preventive behaviours and accessing of health services

We assessed changing levels of interest and sentiment towards five preventive behaviours. These were: hand washing, social distancing, self-isolation, wearing masks, and using NHS 111 (see Appendix 4 for search terms).

Continuing the trend from the previous monitoring period, there was again a slight decrease in interest in all preventive behaviours and accessing of health services apart from face masks. Between 23 March and 05 April 2020, 9.6% of all conversations mentioned at least one preventive behaviour or accessing of health services. Between 06 and 19 April 2020, only 6.9% of all conversations mentioned at least one such behaviour.

Social distancing overtook self-isolation as the behaviour with the highest level of interest and wearing masks was the only behaviour which saw an increase in interest (Figure 2 and Figure 3). There was further a notable spike in interest in wearing masks around 17 April 2020 (Figure 3) which was not due to any one event or post but a number of posts discussing the
importance of face masks to stop coronavirus with one particularly prominent tweet by SkyNews about whether face masks can really protect you from coronavirus

Figure 2. Bar graph of change in the percentage of mentions of preventive behaviours and/or accessing of health services on social media relative to all mentions in English in the UK between 27 January and 30 April 2020.

Figure 3. Line graph of change in the total number of mentions of preventive behaviours and/or accessing of health services on social media in the UK between 27 January and 05 April 2020.

We further analysed sentiment towards preventive behaviours and accessing of health services through the automated sentiment analysis provided by Meltwater® which uses natural language processing algorithms. For all five behaviours, the majority of posts were
either neutral (Figure 3). The behaviours with the largest proportions of negative sentiment were wearing masks and using NHS 111.

Figure 4. Automated sentiment analysis of posts in English regarding the coronavirus outbreak on social media in the UK between 06 and 19 April 2020, by preventive behaviour.

By manually reading through social media and news posts, we further identified some common themes underlying negative content for each of these preventive behaviours.

Wearing masks
There were widespread perceptions that the UK government was ignoring offers for masks and other PPE equipment by British companies and the EU. There were further strong perceptions that masks would be important to stop the spread of coronavirus, as shown for example, by the widespread use of the hashtag #masks4all. There was also outrage at reports of NHS staff being forced to work without face masks. The high level of perceived importance of face masks was also reported to occasionally lead to violence against individuals in public not wearing masks. Furthermore, and in contrast, some groups, in particular male ethnic minorities, were reported to not be able to wear face masks in public without facing stigmatisation.

Using NHS 111
The most common negative content mentioning NHS 111 was due to people complaining about the perceived inadequacies of the service. There were many reports of people repeatedly calling NHS 111 and being told to carry on as normal or isolate at home, with sometimes fatal results. The service was not seen as satisfying the WHO recommendations for effective active monitoring of quarantined patients, resulting in many people dying at home when they should have been told to seek or been given emergency treatment. Yet there were also concerns about working conditions for NHS 111 staff, with reports of telephone operators being forced to come into work with symptoms due to lack of adequate sick pay. There were also perceived inequalities in access to the health service, with Boris Johnson,
other politicians, royals, and actors having access to tests and treatments, when members of the public were told by NHS 111 not to have these.

**Hand washing**
The most common negative themes underlying negative posts mentioning handwashing were criticisms of the government focusing on handwashing or herd immunity rather than other actions such as increasing testing or PPE supplies. There was a perception that the government was pushing the message that washing one’s hands would be enough to stop the coronavirus epidemic when further actions are needed.

**Self-isolation**
There were many calls for the UK government to start imposing self-isolation on travellers arriving in the UK. In addition, discrepancies between WHO advise to self-isolate for 14 days and UK government advice to self-isolate for seven days were perceived as confusing and as mixed messaging. Some felt that they were being pressured to return to work before it was safe to do so as a result of this advice. A number of posts also commented on the strain on public services, such as transportation, due to large numbers of staff self-isolating at home. Some called for more tests to be made available so that essential workers would not be forced to self-isolate unnecessarily.

**Social distancing**
There were many criticisms of the delay by the government in introducing social distancing rules and whether politicians could really argue that they are ‘following the science’. Other posts voiced the views that discussions of herd immunity had led to delays in the implementation of social distancing measures. Footage of the Met police chief leading a round of applause for the NHS on Westminster Bridge was perceived as a breach of social distancing rules. There were also calls for more opportunities for Londoners to safely exercise whilst social distancing by closing streets to vehicles. Some pointed out that people in some professions are unable to social distance, with bus drivers in London in particular noted as at-risk and experiencing high mortality rates. Overall, there were very high levels of awareness of the importance of following social distancing rules and how this would support the NHS, shown for example by the hashtags #stayhomesafelives being used over 67.6k times. The term ‘physical distancing’ became slightly more common, being mentioned 19.3k times, but ‘social distancing’ was still used over ten times more often (230k). There were also many positive expressions of solidarity and the importance of ‘getting through this together’ by following social distancing rules.
Appendix 1. Boolean Search Terms

English
(corona* OR coronavirus OR covid* OR "wuhan virus" OR wuhanvirus OR "chinese virus" OR "china virus" OR chinavirus OR "nCoV*" OR SARS-CoV*) AND country:"gb" AND language:"en"

Appendix 2. Definitions of social media platforms searched

- **Twitter** is an online social networking service and microblogging service that enables its users to send and read text-based posts of up to 280 characters, known as Tweets. Meltwater® has access to the full Twitter firehose, enabling users 15 months of historic Twitter content.
- **News** is copyrighted content from news sources such as The New York Times, BBC, CNN, local newspapers and online journals. Content posted on television networks' websites is also classified as News. Over 3 million traditional media articles a day are crawled and archived, through Meltwater's news sources.
- A **blog** is a personal journal published on the web consisting of discrete entries or "posts", typically displayed in reverse chronological order. It is usually themed on a single subject and written by an individual or small group. Most blogs allow readers to post comments or interact with each other via the blog unlike a static website. Over 1.5 million blogs are posted per day from over 29 million unique social blogs. We define social blogs as all blogs, except for editorial blogs. Editorial blogs are blogs associated to news sites such as http://www.mercurynews.com/blogs.
- A **forum**, sometimes called a message board, is an online discussion site where people can hold conversations in the form of posted messages. A forum can have many separate discussions going on at a time and each one is referred to as a thread. Usually a forum has an underlying theme or topic like politics, sports, technology, fashion etc. Meltwater® pulls in ~5.2 million forum posts per day.
- **Reviews** are reviews from webpages where users can rate products. They may be dedicated product comparison sites or the review sections of large e-commerce companies like amazon.com.
Appendix 3. Definition of mentions

Social media mentions are a measure of how many times a term, name (e.g. “NHS 111” or PHE) or specific topic (coronavirus or COVID-19) has been mentioned on social media channels, such as Twitter, or News. This includes articles, posts, comments, tweets, retweets and forum threads. The more mentions of a topic there are on social media, the higher the awareness of the target topic is going to be. However, not all social media mentions are created equal. Individuals who mention a topic of concern on social media may have very small or irrelevant followings, which may mean that some mentions of a topic of concern have less impact on awareness. It is thus also key to explore the amount of engagement with that topic.

Appendix 4. Preventive behaviours searched and specific search terms

<table>
<thead>
<tr>
<th>Preventive behaviour</th>
<th>Search term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand washing</td>
<td>(handwashing OR (hand* and wash*))</td>
</tr>
<tr>
<td>Social distancing</td>
<td>((social AND distanc*) OR (physical AND distanc*) OR socialdistancing OR “social distancing” OR “social distance” OR physicaldistancing OR “physical distancing” )</td>
</tr>
<tr>
<td>Self-isolation</td>
<td>(self-isolat* OR selfisolat* OR (self* AND isolat*))</td>
</tr>
<tr>
<td>Wearing masks</td>
<td>mask*</td>
</tr>
<tr>
<td>Using NHS 111</td>
<td>111</td>
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