

# 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

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## Objective

Examining COVID-19-related outreach efforts of PHAs in Singapore, the United States, and England, and public response to these outreach efforts on Facebook.

## Background

During COVID-19 pandemic, public health authorities (PHAs) are increasingly using social media to rapidly disseminate pandemic response measures to the public. Understanding of communication strategies across different PHAs and public response on the social media can help improve practices for disseminating information.

## Methods

- We extracted posts and comments from the Facebook pages of the Ministry of Health in Singapore, the Centers for Disease Control and Prevention in the United States, and Public Health England in England from Jan 1, 2019, to Mar 18, 2020, then categorized as pre-COVID-19 (before Jan 1, 2020), and peri-COVID-19.
- COVID-19-related posts were classified into themes.
- Metrics used for measuring outreach and engagement were frequency, mean posts per day, mean reactions/shares/comments per post.
- Responses to the COVID-19 posts were measured using frequency, mean sentiment polarity, positive to negative sentiments ratio and emotions ratio.
- Toxicity in comments were analyzed using frequency, mean likes and replies per toxic comment.
- Trend analysis was performed.

## Results

- Six major themes were identified, with posts about prevention and safety measures and situation updates being prevalent across the three PHAs.
- The themes of the MOH's posts were diverse, while the CDC and PHE posts focused on a few themes.
- **Toxic comments** were **rare** (0.01%) across all PHAs.

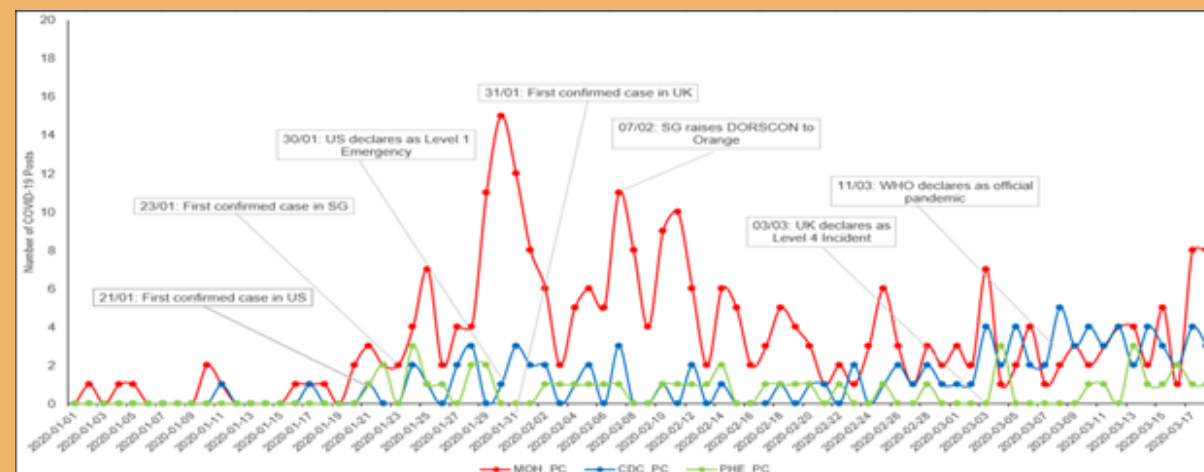
## Conclusion & Discussion

The extent of using Facebook during COVID-19 for outreach purposes varied among the three PHAs. Our study showed that social media analysis is capable of providing insights about the communication strategies of PHAs during disease outbreaks.

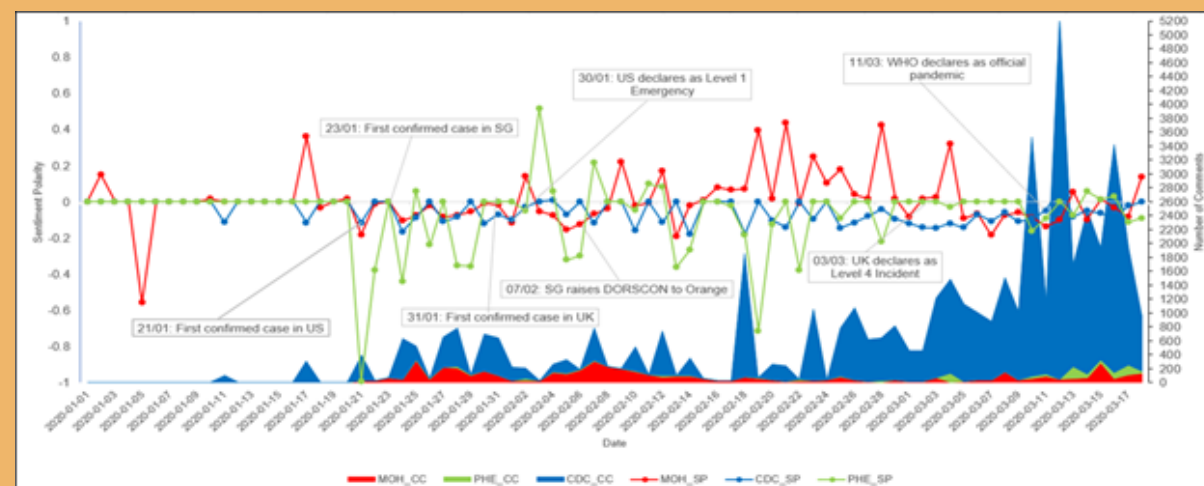
MOH Singapore published **more COVID-19 posts** (n=271; mean PPD 5.0) compared to the CDC (n=94; mean PPD 2.2) and PHE (n=45; mean PPD 1.4).

The mean number of comments per COVID-19 post was **highest for the CDC** (mean CPP 255.3) compared to the MOH (mean CPP 15.6) and PHE (mean CPP 12.5).

Overall, **response sentiments for the MOH posts** (PNSR 0.94) were **more favorable** compared to the CDC (PNSR 0.57) and PHE (PNSR 0.55).



COVID-19 posts frequency during the analysis period



Temporal trend analysis for the number of comments and sentiment polarity

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