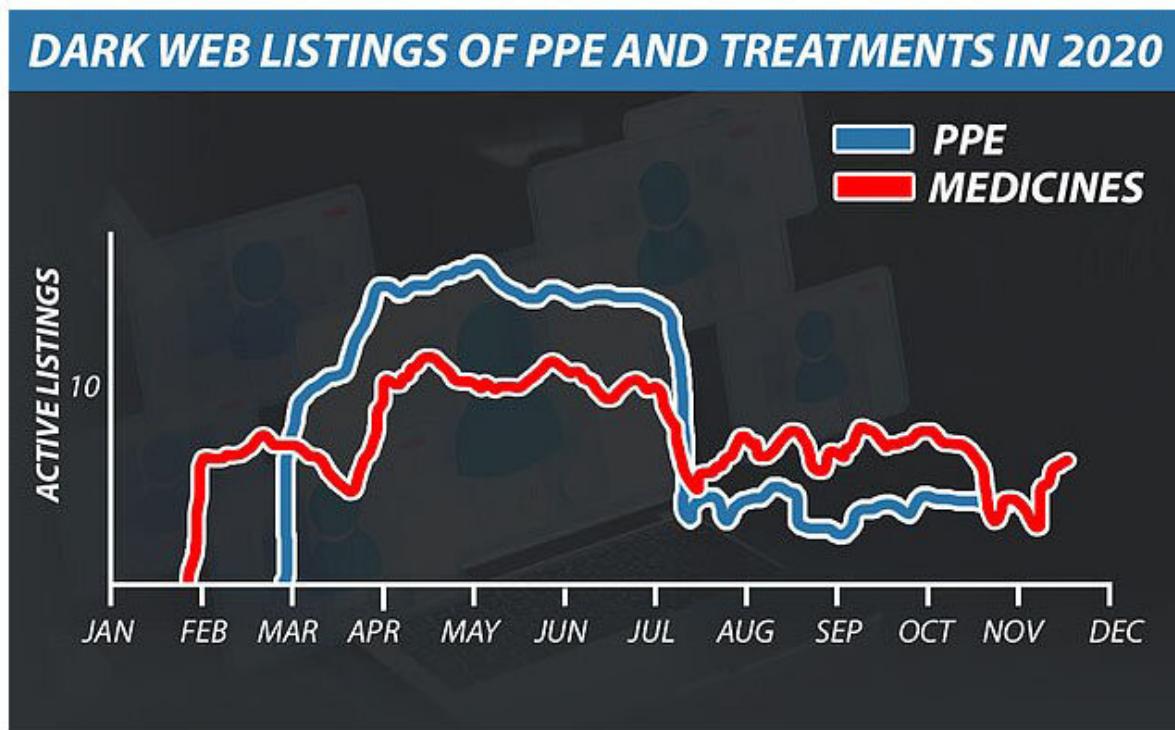


# Data scientist analyzes evolution of COVID-19 dark web marketplaces before the vaccine

February 1 2021, by John Stevenson



Credit: City University London

New research carried out by City data scientist, Dr. Andrea Baronchelli, and colleagues, into the dark web marketplace (DWM) trade in products

related to COVID-19, has revealed the need for the continuous monitoring of dark web marketplaces (DWMs), especially in light of the current shortage and availability of coronavirus vaccines.

In their paper, *Dark Web Marketplaces and COVID-19: before the vaccine* published in the *EPJ Data Science* journal, Dr. Baronchelli and his colleagues analyzed 851,199 listings extracted from 30 DWMs between January 1, 2020 and November 16, 2020 before the advent of the availability of the coronavirus vaccine.

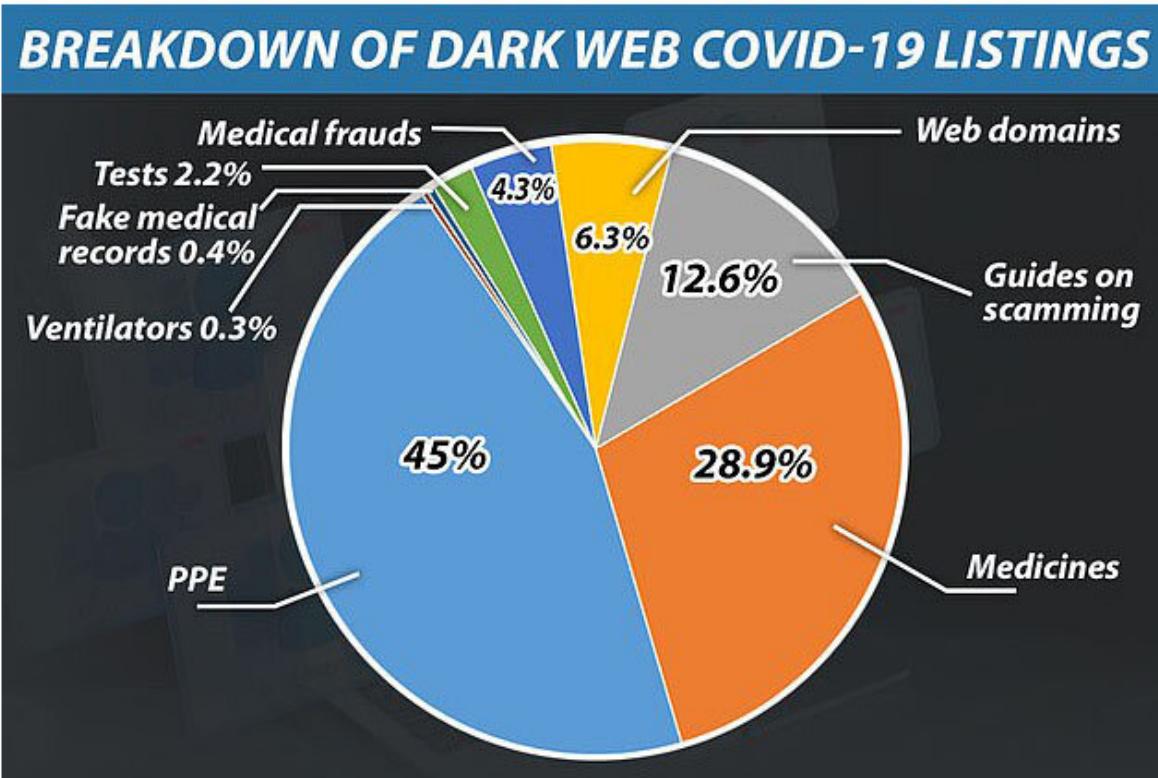
They identify 788 listings directly related to COVID-19 products and monitor the temporal evolution of product categories including Personal Protective Equipment (PPE), medicines (e.g. hydroxychloroquine), and medical fraud.

## **eBay of the dark web**

The authors compare trends in the temporal evolution of trade in these products with variations in [public attention](#), as measured by Twitter posts and Wikipedia page visits.

Among their discoveries, the paper's authors highlight the importance of dark web players such as DarkBay/DBay—the 'eBay of the dark web':

"In our dataset, DarkBay/DBay is featured prominently among DWMs offering COVID-19 specific listings. Ranking in the top 100 sites in the entire dark web, DarkBay/DBay is regarded as the eBay of the dark web because it offers more listings categories than other DWMs. It was also frequently accessible during the period of time monitored during this research, with an uptime of 80%, higher from the 77% uptime of Empire, the largest global DWM at the time of writing."



Credit: City University London

Critically, the authors highlight the importance of the continuous monitoring of DWMs, especially given shortages in the availability and supply of COVID-19 vaccines in various regions of the world:

"Uninformed citizens exposed to waves of misinformation, such as the ones related to hydroxychloroquine, chloroquine, and azithromycin, may be tempted to shop on DWMs thus exposing themselves to serious health risks. Moreover, the availability of regulated products currently in shortage in the traditional economy undermines anti-price gouging regulations and regulated businesses which sell the same products."

**More information:** Alberto Bracci et al. Dark Web Marketplaces and COVID-19: before the vaccine, *EPJ Data Science* (2021). [DOI: 10.1140/epjds/s13688-021-00259-w](#)

Provided by City University London

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