Explore How Research Priorities Shift as COVID-19 Progresses

N&N

- **Goal:** Understand how the development of COVD-19 affected research priorities and scientific development over time.
- **Dataset:** Kaggle open dataset <u>COVID-19 Open Research Dataset Challenge (CORD-19)</u>
  - 52365 unique scholarly articles about coronaviruses
- **Hypothesis:**
  - Virus origin -> transmission -> vaccines -> non-pharmaceutical interventions
- **Methods:**
  - 8 research categories: virus origin, transmission, risk factors, medical care, diagnostics and surveillance, vaccines and therapeutics, ethical and social science considerations, and non-pharmaceutical interventions
  - assign each paper category(ies) through string matching in abstract
  - Filter to containing covid19 keyword, published in 2020, and non-missing abstract
- **Conclusion:**
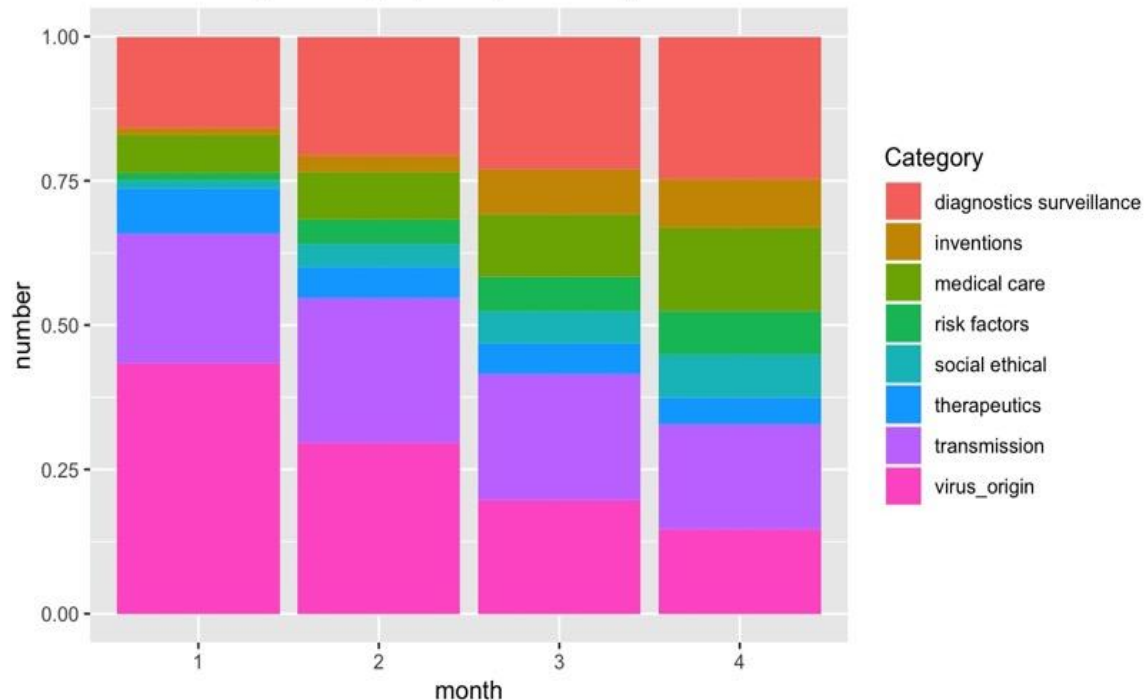 - General focus shifts away from finding cues to preventive measures

Figure 1: This graph shows changes in the research category composition from January 2020 to April 2020.

From Jan to April:

~25% drop in viral origin

~5% drop in therapeutics

~5% increase in diagnostics

~10% increase in intervention

A steady ~25% share in transmission

Potential reasons

- Increase of interest in medical health as healthcare systems reaches its maximum.
- Government encourages social distancing and enacts other non-pharmaceutical interventions.
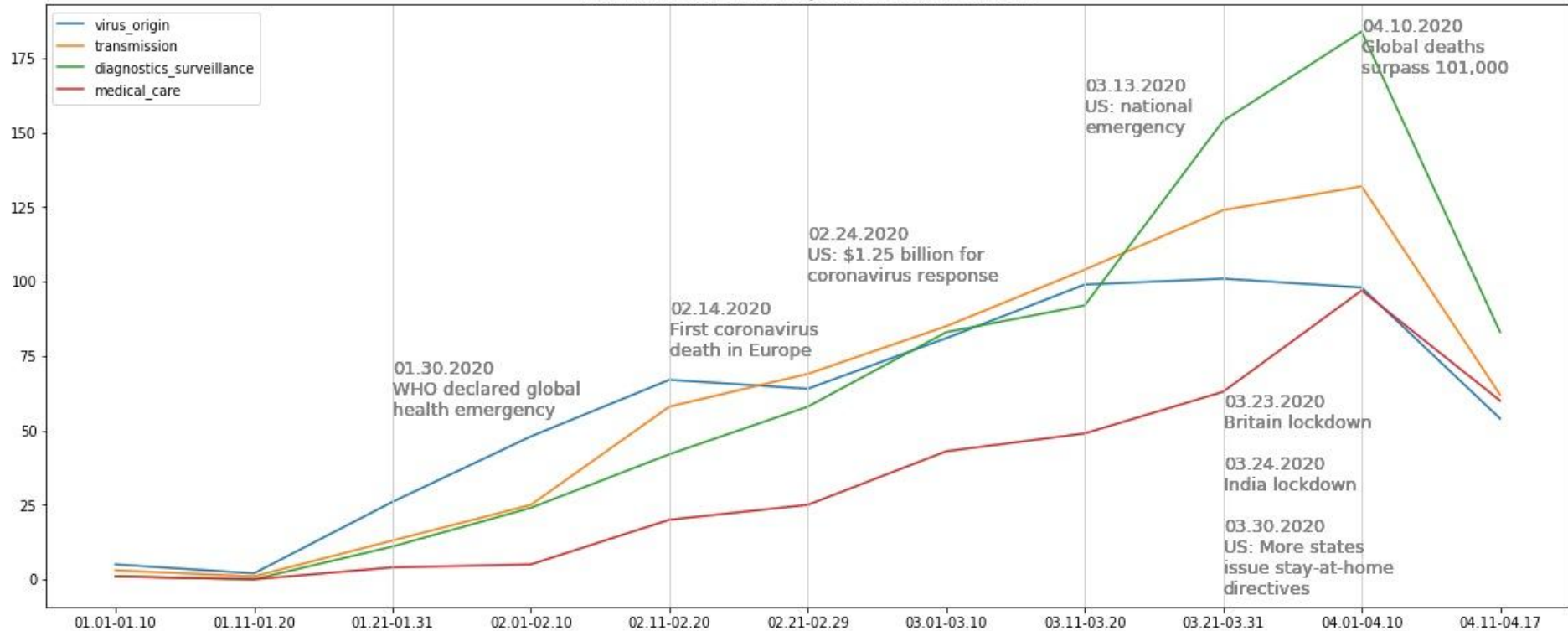- No effective vaccine has been developed

Figure 2: Changes in research trend corresponded with government policies; stay at home orders and lockdowns correspond to an increase in surveillance and medical care research. For instance, the declaration of national emergency (US) on 3/13/2020 immediately corresponded to an increase in diagnostics and surveillance research.