

**COMPENDIUM OF
COVID-19
PUBLICATIONS
VOLUME - I**



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Preface

CORONAVIRUS DISEASE 2019 – (COVID-19)

Coronavirus disease 2019 (COVID -19) caused by the novel coronavirus (SARS-CoV-2) has posed a medical emergency and a rapidly evolving global crisis, from having first emerged in December 2019. On 11th March 2020, it was declared a pandemic by the World Health Organization (WHO). By 20th May 2020, globally there were more than 5.3 million confirmed cases of COVID 19 and 0.3 million deaths across 210 Countries as of today.

“We’re not just fighting an epidemic; we’re fighting an infodemic”

Tedros Adhanom Ghebreyesus, DG WHO

The improved management of COVID 19 human infections depended on characterization of the SARS-CoV-2 virus, its transmission capabilities, severity of infection, availability of vaccines and antiviral drugs to control the impact of COVID-19.

Public health measures such as thorough and frequent hand washing, hygiene, social distancing and self-isolation are proven to be important in controlling transmission.

The international medical, scientific, public health communities and Government agencies have swiftly engaged with the challenge. Several reliable websites, scientific publications and other resources have been helpful in communicating the clinical and social complications arising from the COVID-19 infections.

This compendium focusses on a wide range of research publications and insights from information available on various public portals publishing research on COVID-19. The document contains links to information on a range of topics from epidemiology, characteristics, diagnostics, therapeutics, preventive strategies, drugs, vaccines, etc. and other relevant issues on COVID-19.

We are grateful to Dr Renu Swarup, Secretary Department of Biotechnology (DBT) & Chairperson BIRAC for providing us with insightful guidance and unflinching support in bringing out this compendium. Last but not the least, we thank Dr Shirshendu Mukherjee, Mission Director, Grand Challenges India for providing us with timely and valued guidance for this venture and the entire COVID-19 Publications team for their team efforts.

COVID -19 Technical publications Team

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Analyses on the 500 publications:

COVID-19 (Coronavirus Disease-2019), caused by the coronavirus SARS-CoV-2 (Severe Acute Respiratory Syndrome-Coronavirus-2) has emerged as a rapidly spreading communicable disease and has impacted around 5 105 881 people across the globe as of May 23, 2020. The outbreak of COVID-19 was first reported in Wuhan, Hubei province, China on December 2019 and was declared a Public Health Emergency of International Concern on 30 January 2020. On 11 February 2020, WHO announced a name for the new coronavirus disease: COVID-19.

As a newly appearing infectious disease, COVID-19 garnered great research interest. Scientists across the world are working solidarity to fight against the virus. Publications started pouring in soon after its detection and have now flooded the search engines with information on its epidemiology, source of transmission, control and prevention strategies, symptoms and treatment.

The Grand Challenges India (GCI) based on the directions from Secretary DBT & Chairperson BIRAC and its Mission Director, formulated a COVID Publication team to gain insight into the problem and create a repository of publications for ready referencing. The current document intends to present the preliminary research and publication prototype in first 500 publications. Figure 1 explains the progression of research across different categories. In February researches were majorly focused on epidemiology. In March, apart from epidemiology, researchers focused on infection control, diagnostics and therapeutics. The spurt in therapeutics, diagnostics and vaccines was seen in April.

¹ <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

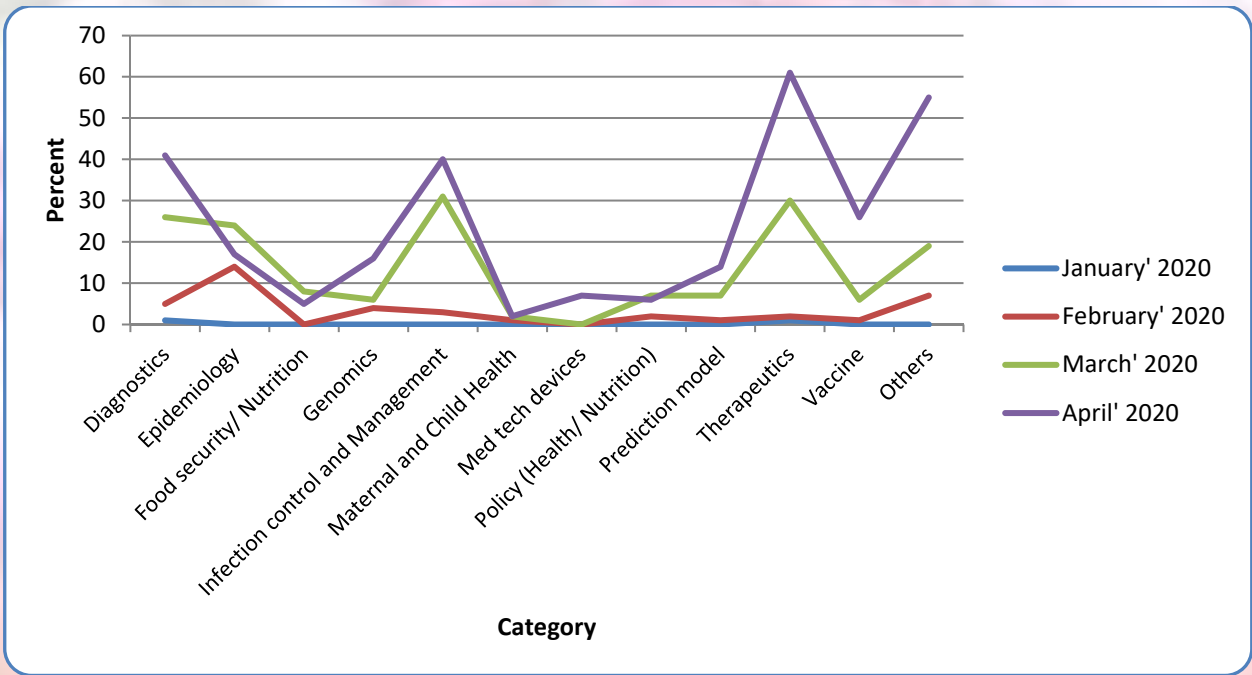


Fig 1: Trend in researches across different categories

Note: Share of publication in 'Others' category was fairly large (81) and it included research briefs, case studies, short communications in public health, demand and supply chain issues, knowledge and practice, prognosis, surveillance and virology.

The maximum number of publications was in therapeutics (94), followed by infection control and management (74), diagnostics (73), epidemiology (55) and vaccines (33) (Fig. 2). Share of publication in 'Others' category was fairly large (81) and it included research briefs, case studies, short communications in public health, demand and supply chain issues, knowledge and practice, prognosis, surveillance and virology.

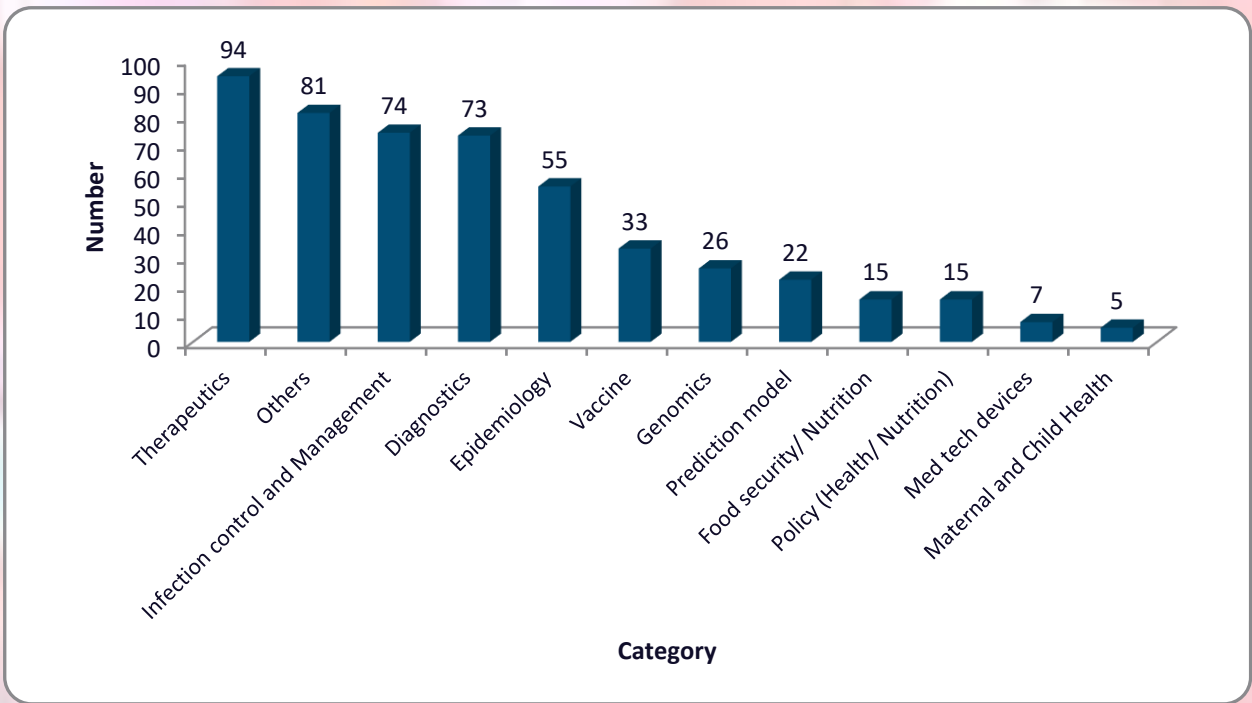


Fig.2 Category wise distribution of publications

The sources of these publications were academia (27.6%), hospitals/ medical centers (22.4%), collaborative (16.8%), others (11.2%), private/ research institutes (9.8%), news articles (7%), World health agencies (3.8%) and Government (1.4). World Health Agencies include BMGF, CDC, CEPI, FAO, FDA, UNICEF and WHO and 'Others' include coalition, journal's editorial/ news and societies (Fig.3).

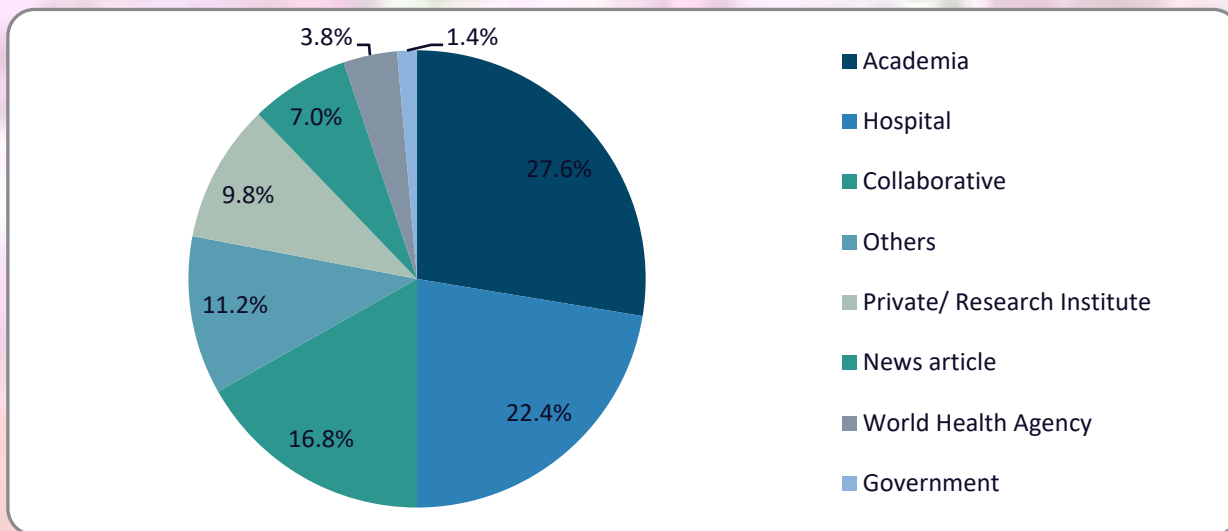


Fig.3 Sources of Publications

The epicenter of outbreak was in China and expectedly the maximum number of publications came out from China (133), followed by USA (126), UK (57) and India (34). The number is highly reflected in 'others' category as well, because it includes all those countries from which the publication number was less than 10 (like Africa, Australia, Austria, Belgium, Brazil, Columbia, Egypt, Finland, Hongkong, Hungary, Indonesia, Iran, Israel, Japan, Korea, Malaysia, Netherland, New Zealand, Norway, Pakistan, Romania, Saudi Arabia, Spain, Sweden, Turkey, Global/ Multi-country) (Fig.4).

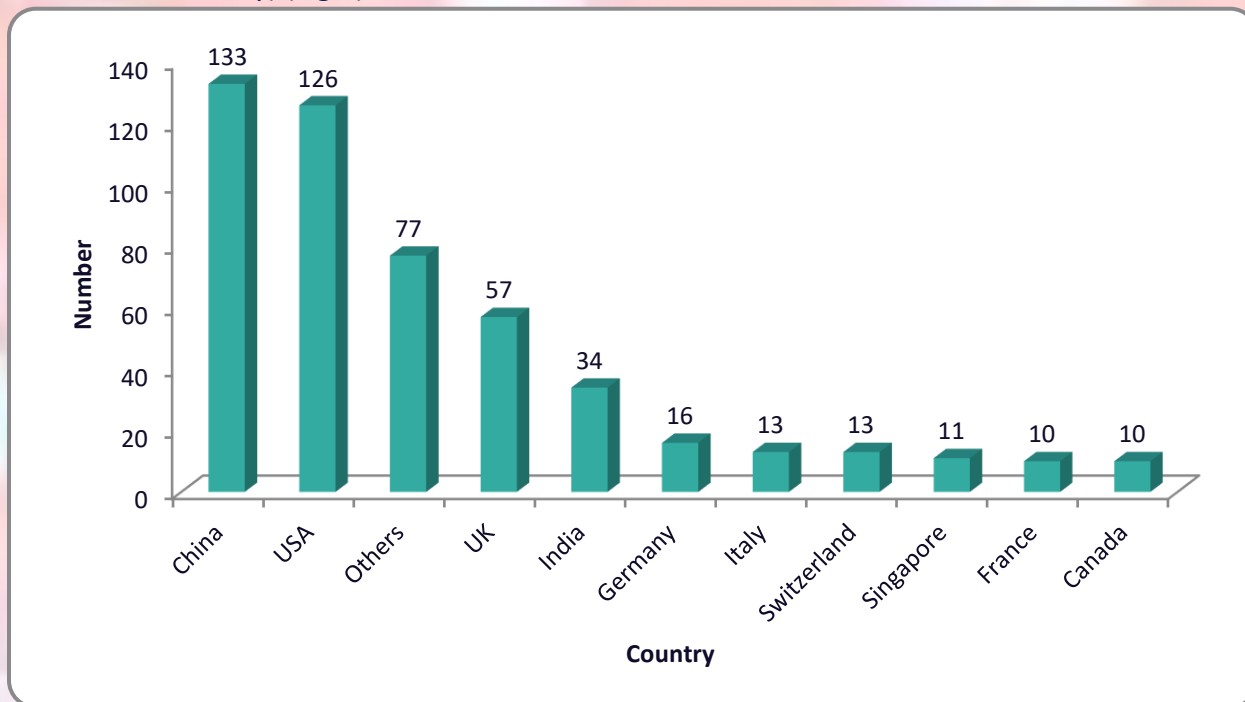


Fig.4 Country wise distribution of publications

The trend of publication from each country is presented in Figure 5. From China, majority of publications were in epidemiology and diagnostics. USA's publications were majorly focused on vaccines/ therapeutics and had almost equal share in infection control and management, epidemiology and diagnostics. UK and India had major focus on therapeutics/ vaccines.

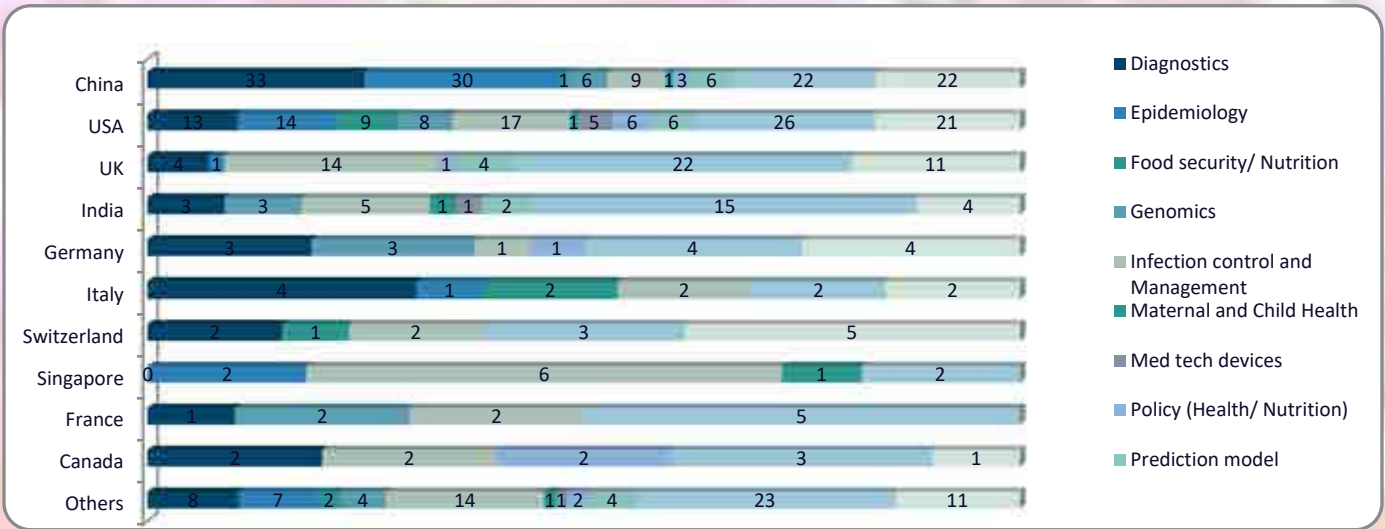


Fig.5 Category wise distribution of publication within each country

category wise distribution of publications within each country

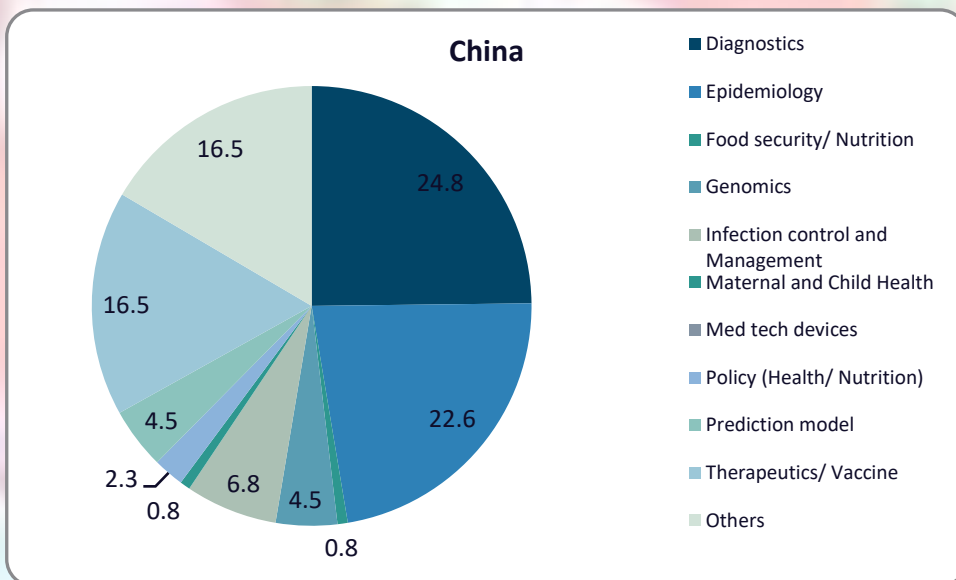


Fig.5a Category wise distribution of publication within China

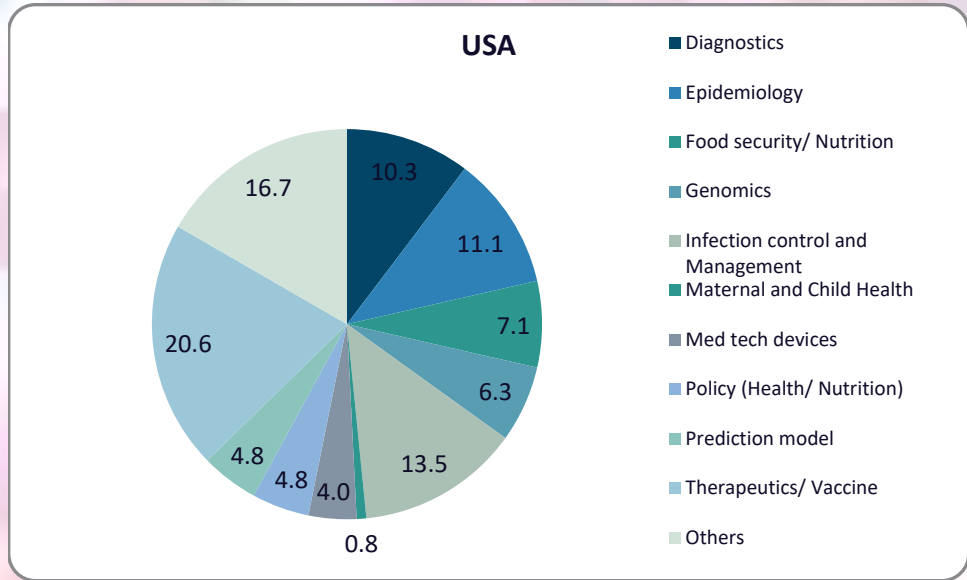


Fig.5b Category wise distribution of publication within USA

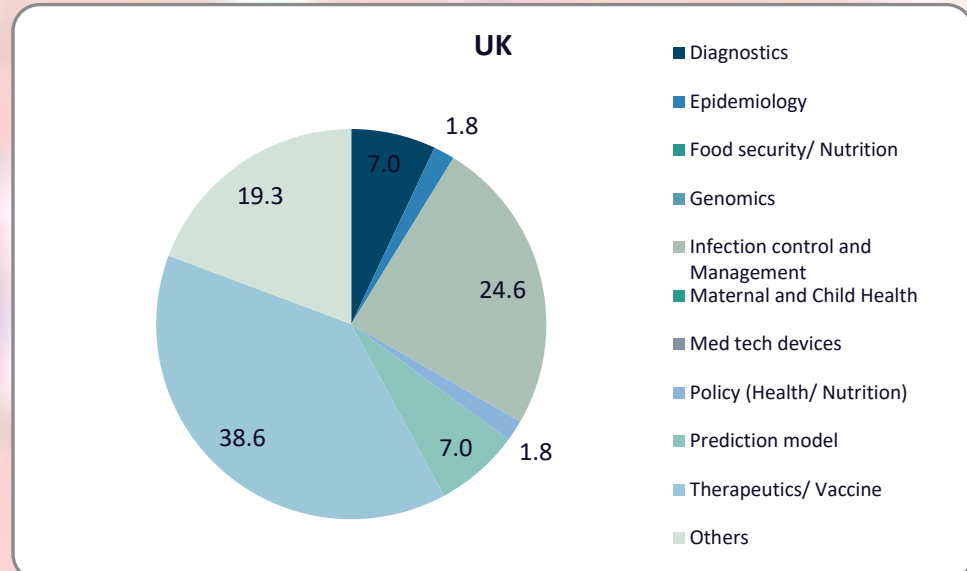


Fig.5c Category wise distribution of publication within UK

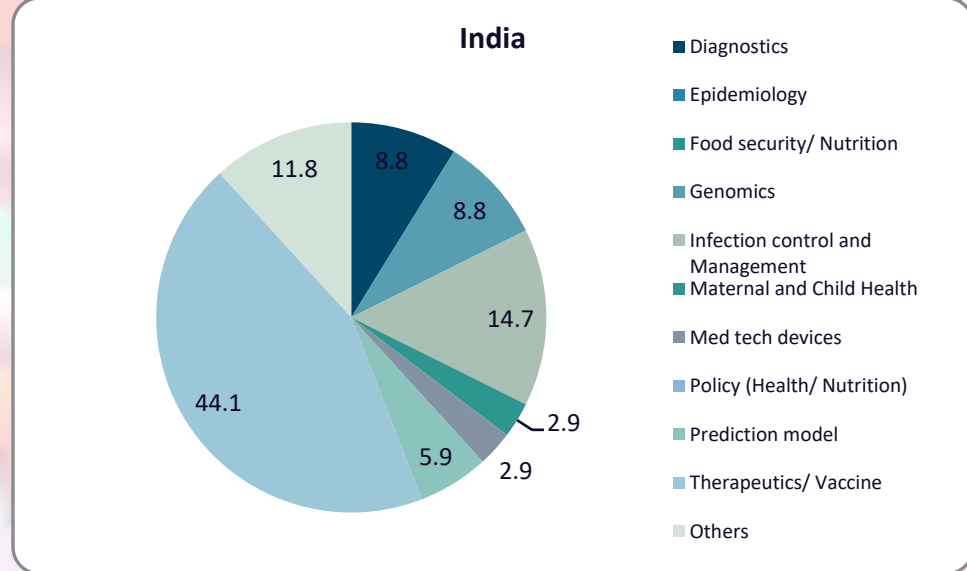


Fig.5d Category wise distribution of publication within India

Germany

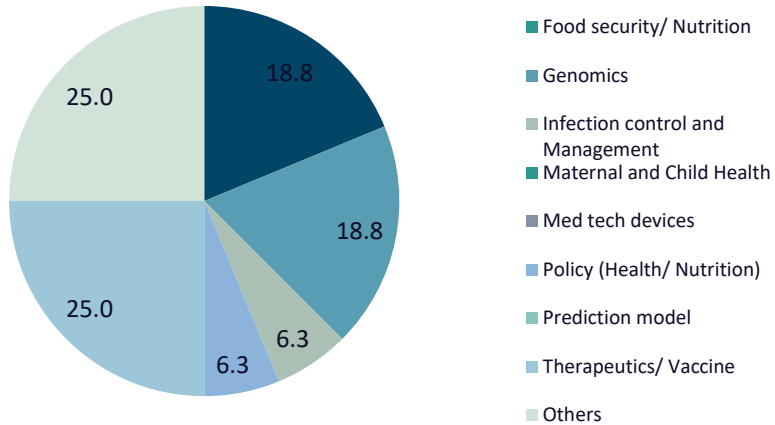


Fig.5e Category wise distribution of publication within Germany

Italy

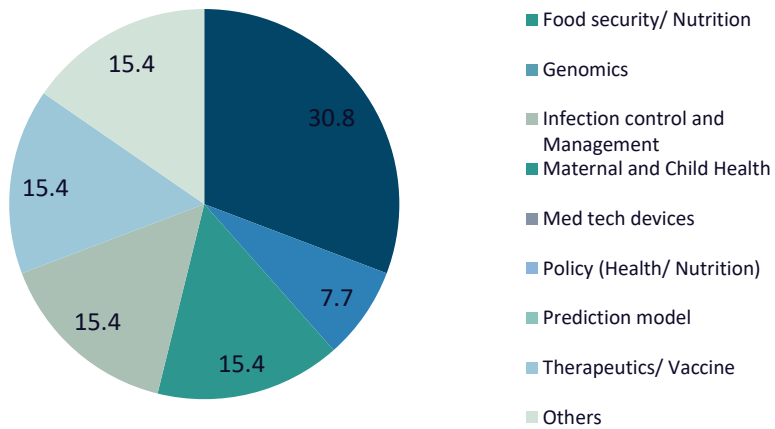


Fig.5f Category wise distribution of publication within Italy

Switzerland

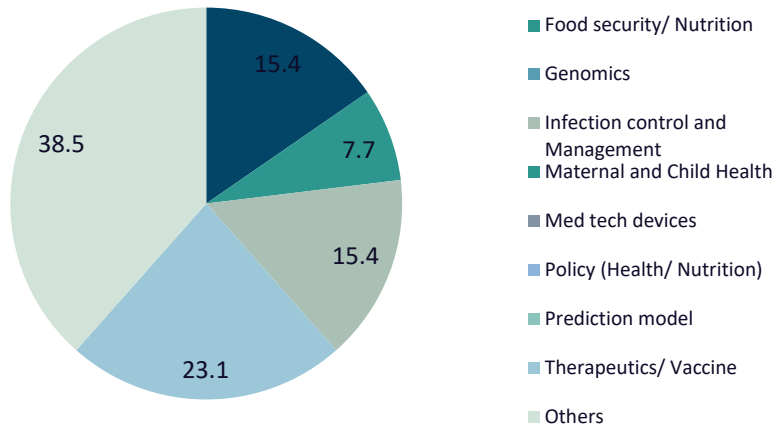


Fig.5g Category wise distribution of publication within Switzerland

Singapore

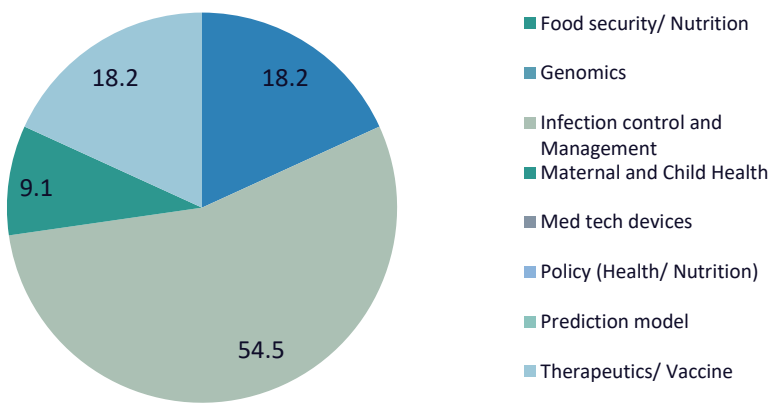


Fig.5h Category wise distribution of publication within Singapore

France

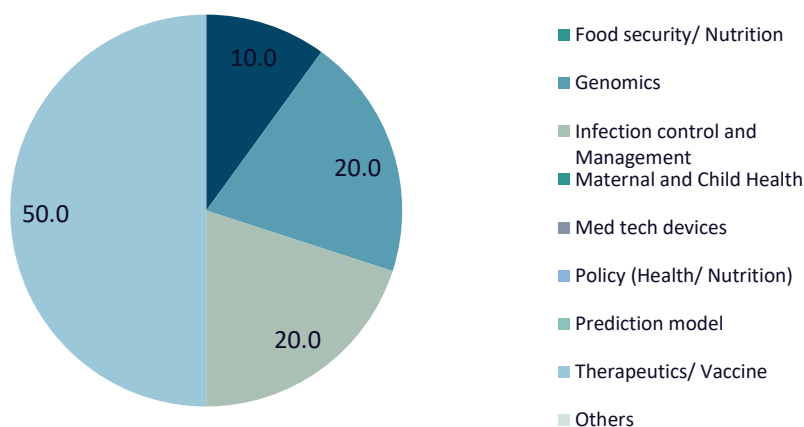


Fig.5i Category wise distribution of publication within France

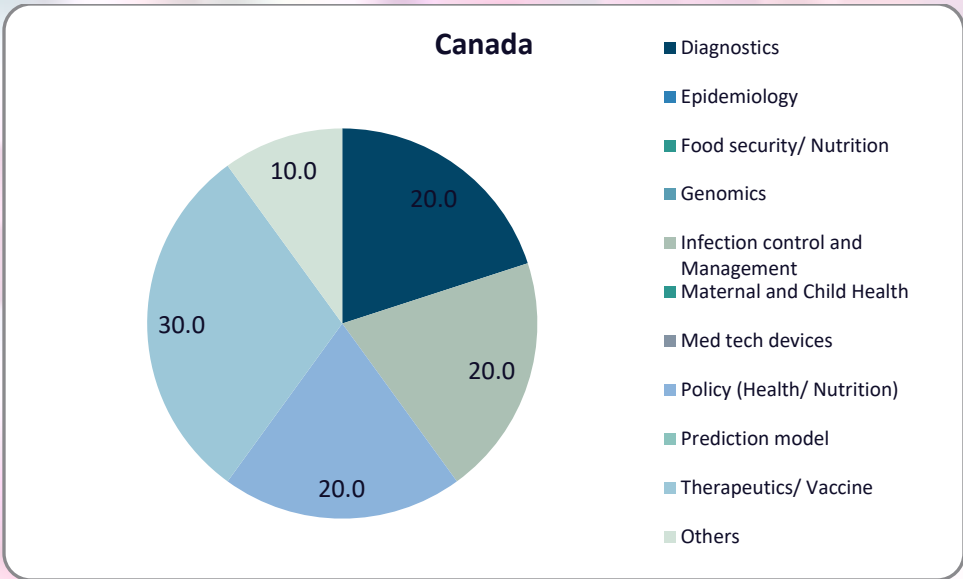


Fig.5j Category wise distribution of publication within Canada

Overall figure explains that each country’s focus was mainly on therapeutics/vaccines, followed by infection control & management and diagnostics, corroborating with the urgent need to control and treat the infection. However, there is also a pressing need to focus on innovations in med tech devices and impact of COVID-19 on healthcare infrastructure, management of other illnesses, clinical trials etc., which might get explained after few months as more publications come out from scientific experts across the globe.

References

References to 500 publications (Jan 2020 – Apr 2020) may be accessed on the following areas:

