

Vaccines in the News, 2019-2026: Attention, Geography and Tone of Global Vaccine Coverage, and How It Compares with Research and Invention

Fliar BI · Prism Research Layer · Working paper, October 2026 · Dataset and code: github.com/fliarbi/prism-news-api · Licence CC BY-NC 4.0

Abstract

We measure how vaccines and vaccination were covered in a global news index from January 2019 to July 2026, using 1,097,930 de-duplicated vaccine articles, and set that coverage beside 176,001 research papers (2015-2025) and 27,649 patent families (2015-2024) on vaccines. Six results stand out:

1. **A single wave.** Vaccines took 333.85 of every 10,000 news articles in 2021, 18.15 times their 2019 share. The peak month was March 2021, at 407.51 per 10,000, 22.2 times the 2019 annual average.
2. **A higher floor.** By 2025 the share had fallen 91.8% from 2021, to 27.48 per 10,000. That is still 1.49 times the 2019 share, and 1.27 times the 2024 share.
3. **Urgent but not unusually negative.** 81.3% of vaccine articles carry a critical priority label (all news: 42.6%). Their negative share (36.8%) is close to that of all news (33.6%).
4. **Geography.** The United States holds 54.01% of located vaccine news, at a lift of 1.12. India holds 8.75%, at 0.66. Africa (1.78) and South America (1.76) are the most over-represented continents. Within India, Telangana (2.1), Kerala (1.39) and Himachal Pradesh (1.36) lead; within the United States, New Mexico (4.69), Rhode Island (3.15) and Louisiana (3.03).
5. **Shifting attention.** From 2023 to 2025, vaccine news rose 1.78-fold as a share of American news and fell to 0.6 times its 2023 level in India. In the United States, 55.2% of vaccine articles were negative, against 33.1% of all American news.
6. **Research and invention.** Vaccine papers rose from 16.91 per 10,000 papers in 2019 to 46.23 in 2022, then fell to 26.46 in 2025. Vaccine patent families grew 1.59-fold from 2015 to 2024; China's office holds 37.9% of office filings.

Findings stated for citation

- **F1.** Vaccines took 333.85 of every 10,000 news articles in 2021, 18.15 times their 2019 share.
- **F2.** March 2021 was the peak month for vaccine news, at 407.51 articles per 10,000.
- **F3.** The 2025 share (27.48 per 10,000) was 91.8% below 2021 but 1.49 times 2019.
- **F4.** 81.3% of vaccine articles carried a critical priority label, 1.91 times the all-news share; the negative share (36.8%) was close to all news (33.6%).
- **F5.** Vaccine hesitancy and public perception appeared in 8.69% of themed vaccine articles.

- **F6.** The United States held 54.01% of located vaccine news (lift 1.12); India 8.75% (lift 0.66).
- **F7.** Africa (1.78) and South America (1.76) were the most over-represented continents; Asia (0.71) and Europe (0.82) under-represented.
- **F8.** Within India, Telangana (2.1), Kerala (1.39) and Himachal Pradesh (1.36) had the most over-represented vaccine news.
- **F9.** Within the United States, New Mexico (4.69), Rhode Island (3.15) and Louisiana (3.03) had the most over-represented vaccine news.
- **F10.** Vaccine news rose 1.78-fold as a share of American news from 2023 to 2025, and fell to 0.6 times in India.
- **F11.** 55.2% of US vaccine articles were negative, against 33.1% of all American news.
- **F12.** Vaccine papers peaked at 46.23 per 10,000 papers in 2022, 2.73 times the 2019 share.
- **F13.** Vaccine patent families published per year grew 1.59-fold between 2015 and 2024.

1. Introduction

Vaccines are among the most effective tools of public health, and news is one of the main ways the public learns about them. Coverage reports new vaccines and trials, campaigns and shortages, mandates and disputes. It can raise confidence or spread doubt. Yet the amount of attention vaccines receive is rarely measured as data in its own right. Vaccination registries record doses. Surveys record opinion. Bibliometric studies record research. Few sources record how much of the news vaccines take, and when, where and in what tone.

This paper and its dataset do that. They combine three records for one topic: a global news index, research papers and patents. Each comparison uses a denominator, so that growth in the index or in publishing is not mistaken for growth in interest. The period covers the COVID-19 pandemic, its vaccination campaigns and the years after it. The companion dataset publishes an article-level sample (91,643 rows) and full coverage tables, so every figure here can be re-derived. The [Prism News API](#) serves the full history.

2. Data and methods

News. The Prism news index holds articles from outlets worldwide; non-English articles are indexed in English translation. Each article carries its opening text (the first few sentences), a primary location, a graded tone label, an editorial priority rating (1–9), themes, keywords and named organisations. We count unique article identifiers; repeated rows for the same article are removed. When this release was built, 92.88% of the index was readable, so all counts are lower bounds.

Matching. An article is about vaccines when its opening text contains *vaccine*, *vaccines*, *vaccination*, *vaccinations*, *vaccinated*, *unvaccinated*, *immunization* or *immunisation* as whole words. Four families of matches are excluded:

- related-link teasers ("you might also like: ...") and sponsored items;
- hospital service listings;
- computer-security uses ("antivirus", "malware");
- templated market-research releases ("vaccine market size, CAGR, forecast period").

Together these removed 4,998 of 1,102,928 raw matches (0.45%). The vocabulary is specific, so few false senses exist. One reviewer read 40 randomly drawn matched openings, drawn after the final exclusions. 37 used the words in their medical sense and said something about vaccines (precision 92.5%). In 28 (70%) vaccines or vaccination were the main subject. The three misses were a virology abstract in which vaccines were not the subject, a disease-outbreak bulletin that named vaccines only in its title, and a trade-show promotion. A second reviewer re-checked 15 of the 40 openings and found the outbreak bulletin.

Measures. Coverage over time is expressed per 10,000 articles in the index that month or year, because the index grew from 11,807,177 articles in 2019 to 26,990,006 in 2025. Seasonality uses each year's within-year month shares, averaged over the complete years 2019–2025. Geography, tone, priority and themes use January 2023 – July 2026. Geography is expressed as lift: a country's share of vaccine articles divided by its share of all located articles. States are compared with their own country's located news. States with fewer than 50 vaccine articles are not discussed. Place tags derived from ordinary words ("Congress", "Earth", "Winter", "Cloud", "Mobile", "Hurricane" and others) were treated as unlocated in every location field, which removes 15.3% of city-tagged articles.

Research and patents. Research papers are de-duplicated articles and reviews (2000–2025) with a vaccine term in the title. Repository deposits and the computer-security sense ("software vaccine") are excluded. Patent families (2006–2024) use the same title rule, are counted once per filing office, and exclude software and network-security filings.

3. Results

3.1 How much and when

The index holds 1,097,930 vaccine articles from January 2019 to July 2026. Coverage rose in one wave (Table 1). The share was 18.39 per 10,000 in 2019, rose to 89.29 in 2020 and reached 333.85 in 2021, 18.15 times the 2019 level. It fell to 78 in 2022 and to a low of 21.6 in 2024, then rose to 27.48 in 2025. The highest monthly share was March 2021, at 407.51 per 10,000 (Figure 1). That is about one article in every 25, and 22.2 times the 2019 annual average.

Year	Vaccine articles	All articles in index	Per 10,000
2019	21,710	11,807,177	18.39
2020	144,914	16,230,014	89.29
2021	576,937	17,281,220	333.85
2022	149,102	19,115,515	78
2023	58,665	20,484,506	28.64
2024	50,357	23,311,896	21.6
2025	74,177	26,990,006	27.48

Table 1. Vaccine articles per year and as a share of the index. 2026 (January–July) is partial and omitted.

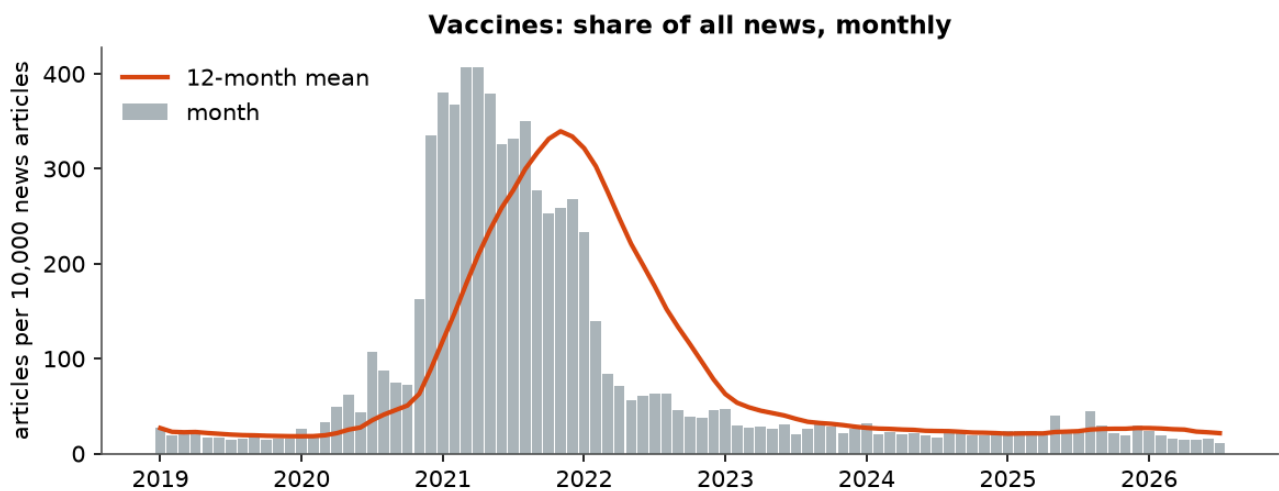


Figure 1. Vaccine news as articles per 10,000 news articles, monthly, January 2019 – July 2026. Bars are months; the line is the 12-month mean.

The 2025 share is 91.8% below 2021 but 1.49 times the 2019 share. Vaccines did not return to their pre-pandemic place in the news. Monthly shares within a year are uneven (Figure 2). December (10.08%) and January (12.89%) together hold 22.97% of a typical year's coverage, and October is the quietest month (6.58%). This average is shaped by the start of COVID-19 vaccination in December 2020 and January 2021, so we do not read it as a stable seasonal pattern.

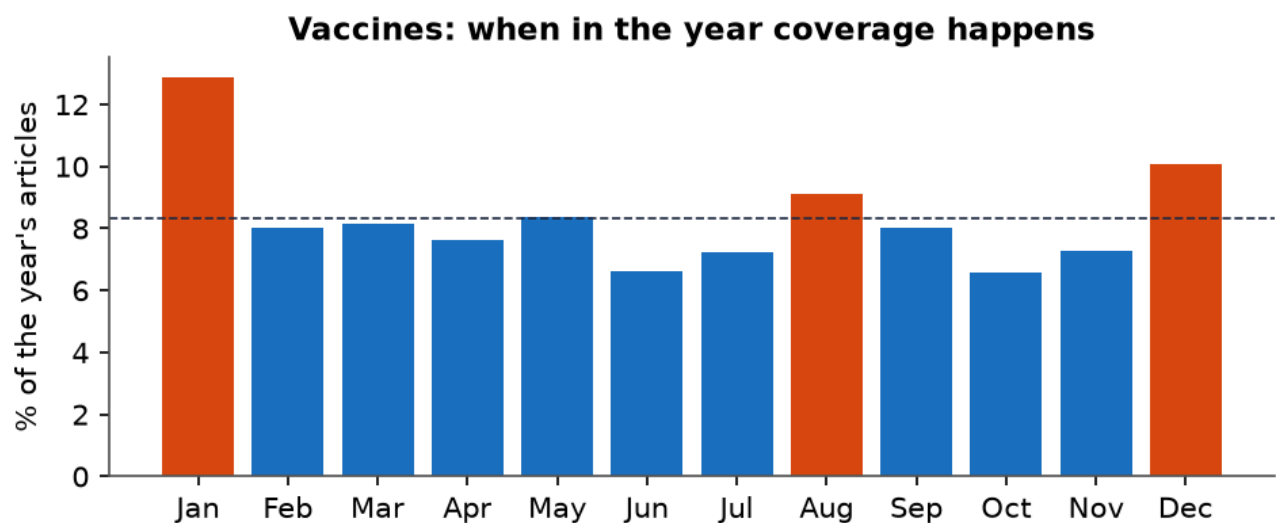


Figure 2. Share of each year's vaccine articles published in each month, averaged over 2019–2025. Dashed line = an even spread (8.3% per month).

3.2 Where

Between January 2023 and July 2026, 76,637 vaccine articles carried a primary location. The United States holds the largest share (54.01%), with a lift of 1.12: vaccines take a slightly larger share of American news than of news overall. India's share (8.75%) comes with a lift of 0.66. Among the 44 countries with at least 100 located vaccine articles, the most over-represented are in Africa: the Democratic Republic of the Congo (12.16) and Uganda (4.05). Brazil (2.86), Belgium (2.82) and Denmark (2.76) follow. The United Arab Emirates (0.33), Italy (0.39), Ukraine (0.41), Ireland (0.46) and Russia (0.49) are the most under-represented (Table 2, Figure 3).

Country	Located vaccine articles	Share %	Lift vs all news
United States	41,388	54.01	1.12
India	6,703	8.75	0.66
United Kingdom	4,311	5.63	0.96
Brazil	1,895	2.47	2.86
China	1,877	2.45	0.93
Australia	1,800	2.35	1.1
Canada	1,750	2.28	1.06
Nigeria	1,330	1.74	1.27
France	819	1.07	0.54
Germany	785	1.02	0.87
Ghana	536	0.7	1.45
Japan	503	0.66	0.62
Belgium	422	0.55	2.82
Democratic Republic of the Congo	355	0.46	12.16
Kenya	316	0.41	1.88
Denmark	247	0.32	2.76
Uganda	183	0.24	4.05

Table 2. Selected countries in located vaccine news, January 2023 – July 2026, with lift against all located news: the ten countries with the most located articles, followed by selected other countries (full list in [data/countries.csv](#)).

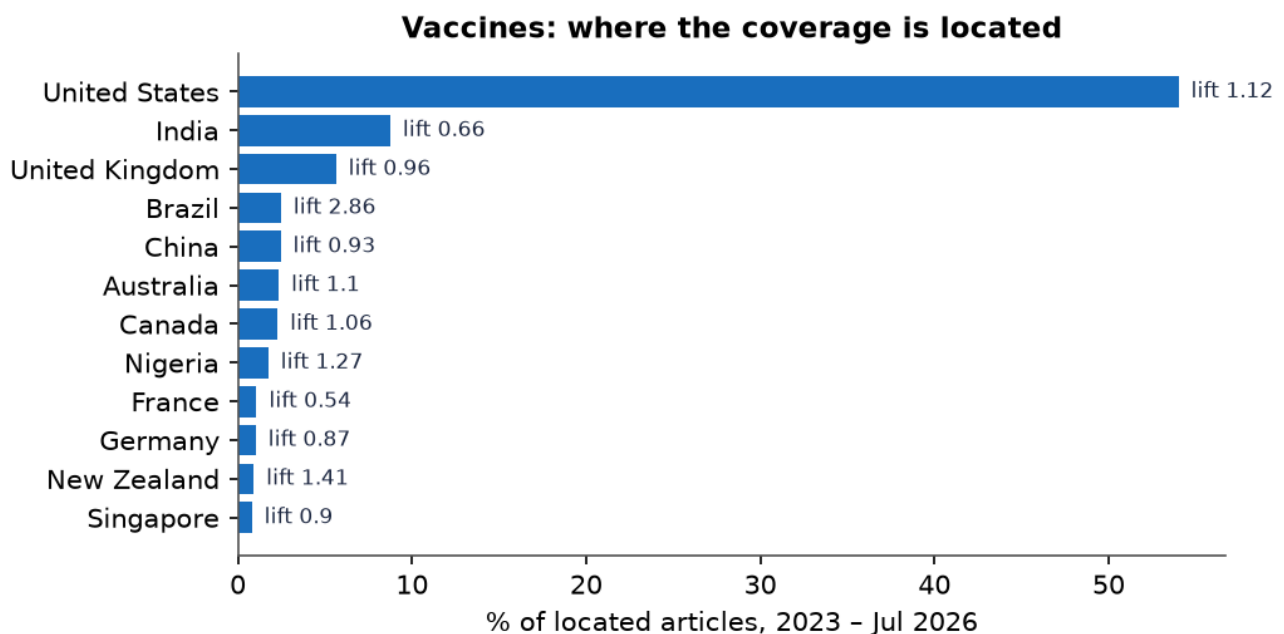


Figure 3. Leading countries by share of located vaccine articles, 2023 – Jul 2026, labelled with lift against all located news.

3.3 Geo intelligence: continents, states and shifting attention

The world map (Figure 4) shows the pattern at a glance. Vaccines are over-represented in the news of Central and East Africa, Brazil and parts of South America, and under-represented in Russia, Italy, France, Spain, Mexico and India. Within Europe, Belgium and Denmark stand out as over-represented. By continent, Africa (1.78), South America (1.76),

Oceania (1.21) and North America (1.11) are over-represented, while Asia (0.71) and Europe (0.82) are not (Figure 7, left).

Vaccines: which countries over- and under-cover the topic

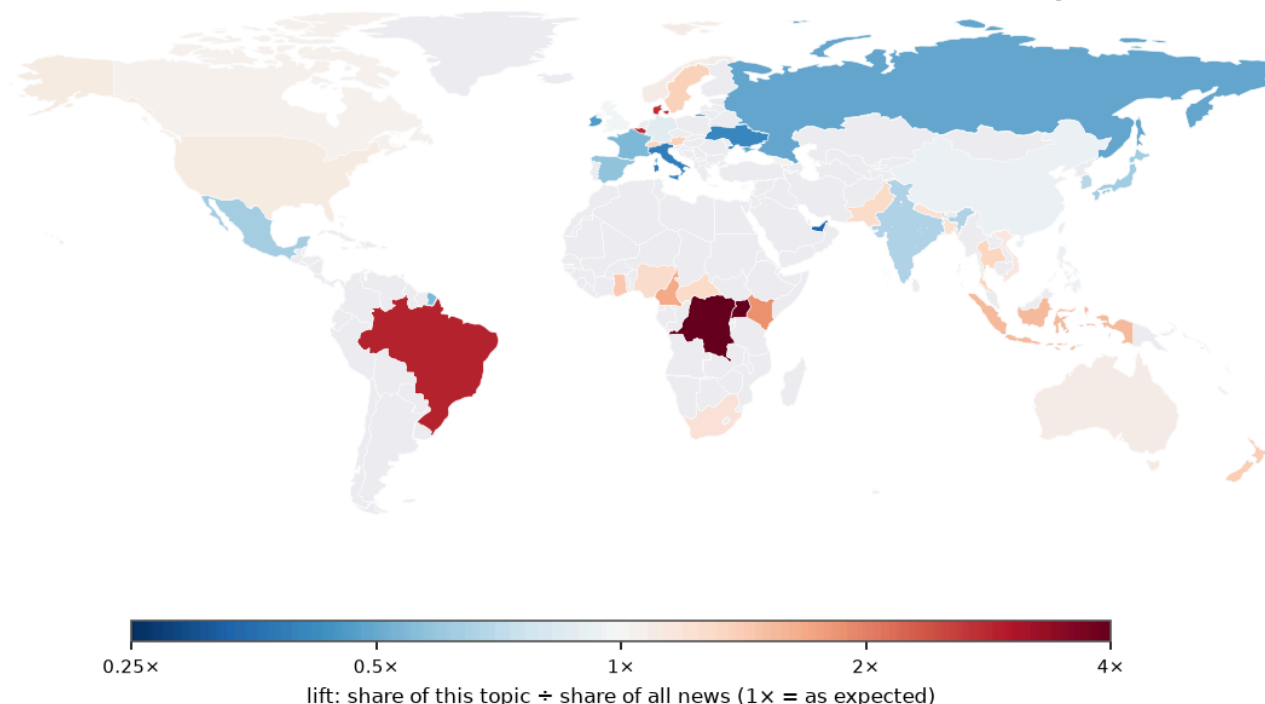


Figure 4. Lift of each country's share of located vaccine articles, January 2023 – July 2026 (red = over-represented, blue = under-represented, grey = fewer than 100 articles). India is drawn with its official outline.

Within countries, lifts are smaller than between countries (Tables 3 and 4). In India, 4,516 vaccine articles carried a state. Measured against each state's share of Indian news, Telangana (2.1), Kerala (1.39) and Himachal Pradesh (1.36) are the most over-represented. Andhra Pradesh (0.55), West Bengal (0.56) and Punjab (0.68) are the most under-represented. The three largest states by count, Maharashtra (0.94), Uttar Pradesh (1.05) and Delhi (0.94), sit close to their weight in Indian news (Figure 5).

In the United States, 31,456 articles carried a state. New Mexico (4.69), Rhode Island (3.15), Louisiana (3.03) and Kentucky (3.02) lead by lift, followed by Vermont (2.08) and Massachusetts (2.0). New Jersey (0.16), Nevada (0.48), Nebraska (0.61), Alabama (0.61) and Pennsylvania (0.63) are far below their weight in American news (Figure 6). New York (4,243) and California (3,344) hold the most articles, at lifts of 1.16 and 1.07. Some New Mexico and Louisiana rows are placed through town names that double as a polling firm or an agency's home city ("Gallup", "Atlanta"), so their lifts are upper bounds. Connecticut (1.77) is left out of the ranking: about half of its sampled rows are placed through the town of Lyme, taken from news of Lyme disease vaccines. Washington (2.37) is also left out: most of its sampled rows carry no city and are placed through the name "Washington" as it appears in news datelined from the US capital, not from the state.

India: state	Articles	Lift	United States: state	Articles	Lift
Telangana	330	2.1	New Mexico	518	4.69
Kerala	153	1.39	Rhode Island	153	3.15
Himachal Pradesh	83	1.36	Louisiana	425	3.03
Bihar	254	1.18	Kentucky	330	3.02
Karnataka	291	1.16	Vermont	69	2.08
Haryana	133	1.15	Massachusetts	1,490	2.0
Rajasthan	174	1.11	Idaho	116	1.99
Odisha	103	1.1	Maryland	543	1.7

Table 3. States with the most over-represented vaccine news, January 2023 – July 2026. Lift = the state's share of the country's located vaccine articles ÷ its share of all located news from that country. States with fewer than 50 articles, Connecticut and Washington (see text), are omitted.

India: state	Articles	Lift	United States: state	Articles	Lift
Andhra Pradesh	57	0.55	New Jersey	965	0.16
West Bengal	88	0.56	Nevada	155	0.48
Punjab	78	0.68	Nebraska	81	0.61
Gujarat	122	0.82	Alabama	221	0.61

Table 4. States with the most under-represented vaccine news, January 2023 – July 2026 (at least 50 articles).

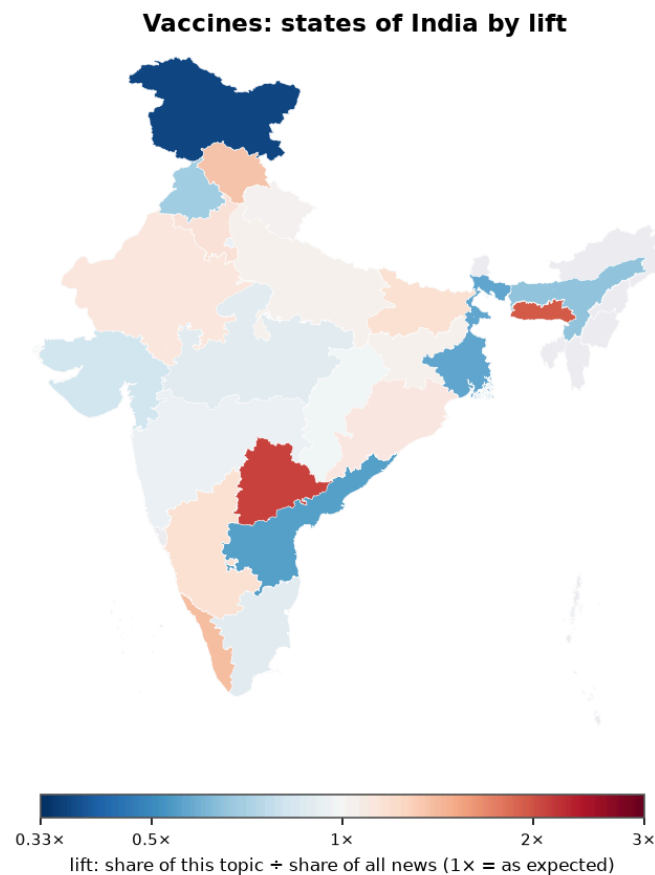


Figure 5. Lift of each Indian state's share of located vaccine articles against its share of all located Indian news, January 2023 – July 2026. Official outline; Ladakh is drawn within Jammu and Kashmir in the boundary file used.

Vaccines: states of United States by lift

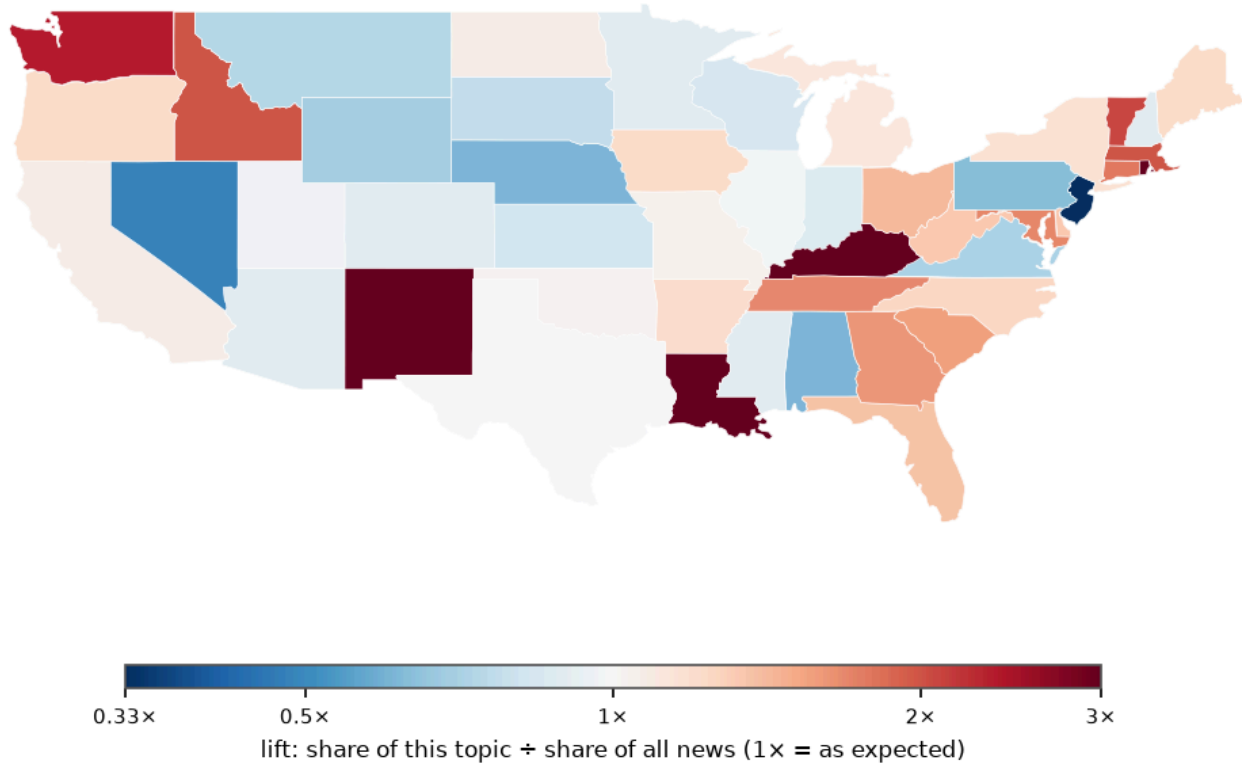


Figure 6. Lift of each US state's share of located vaccine articles against its share of all located US news, January 2023 – July 2026.

Attention also moves between countries from year to year (Table 5, Figure 7, right). Measured as vaccine articles per 10,000 of each country's located news, the United States rose from 19.07 in 2023 to 33.98 in 2025 (1.78 times). Belgium rose 2.49 times, Brazil 1.72 times and Spain 1.58 times. Singapore (0.47), France (0.52), Japan (0.55), Ghana (0.57), Switzerland (0.58) and India (0.6) fell over the same years.

Country	2023	2025	2025 ÷ 2023
Belgium	43.36	108.11	2.49
United States	19.07	33.98	1.78
Brazil	46.32	79.78	1.72
Spain	9.14	14.48	1.58
Pakistan	15.31	23.32	1.52
Kenya	29.24	40.27	1.38
India	18.26	11.04	0.6
Switzerland	35.53	20.51	0.58
Ghana	43.24	24.85	0.57
Japan	17.12	9.47	0.55
France	15.35	7.98	0.52
Singapore	25.7	12.13	0.47

Table 5. Largest rises and falls in vaccine attention, articles per 10,000 of each country's located news, 2023 vs 2025, among the 25 countries with the most vaccine news that had at least 100 vaccine articles in 2025.

Tone differs by country when each country is compared with its own news. In the United States, 55.2% of vaccine articles were negative, against 33.1% of all American news. Canada (50.5% against 27.1%), New Zealand (62.7% against 45.7%), Ireland (49.2% against 34%)

and Germany (47.8% against 35.6%) show the same pattern. In India (31.2% against 41.2%), Nigeria (32.2% against 44.4%), Brazil (28.9% against 38.3%) and Belgium (15.6% against 32.5%), vaccine news was less negative than the country's news overall.

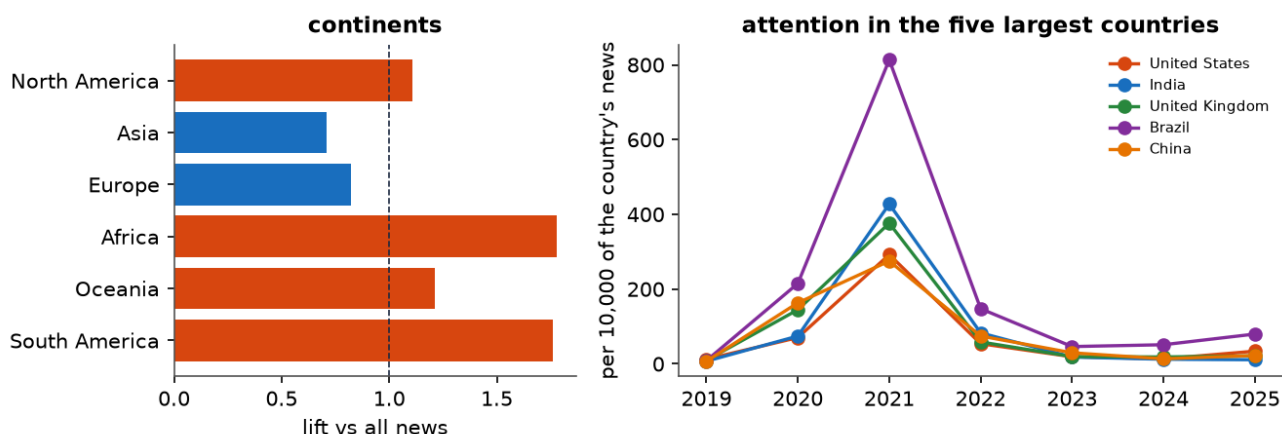


Figure 7. Left: lift by continent, January 2023 – July 2026. Right: vaccine articles per 10,000 of each country's located news, 2019–2025, for the five countries with the most articles.

3.4 Tone, urgency and themes

Vaccine news is labelled far more urgent than news in general, but it is not much more negative (Figure 8). Among articles with a tone label, 36.8% are negative, against 33.6% across the index, and 60.7% are positive, against 56.8%. The index's priority labels put 81.3% of vaccine articles at critical level (7 or higher), against 42.6% of all news (1.91 times).

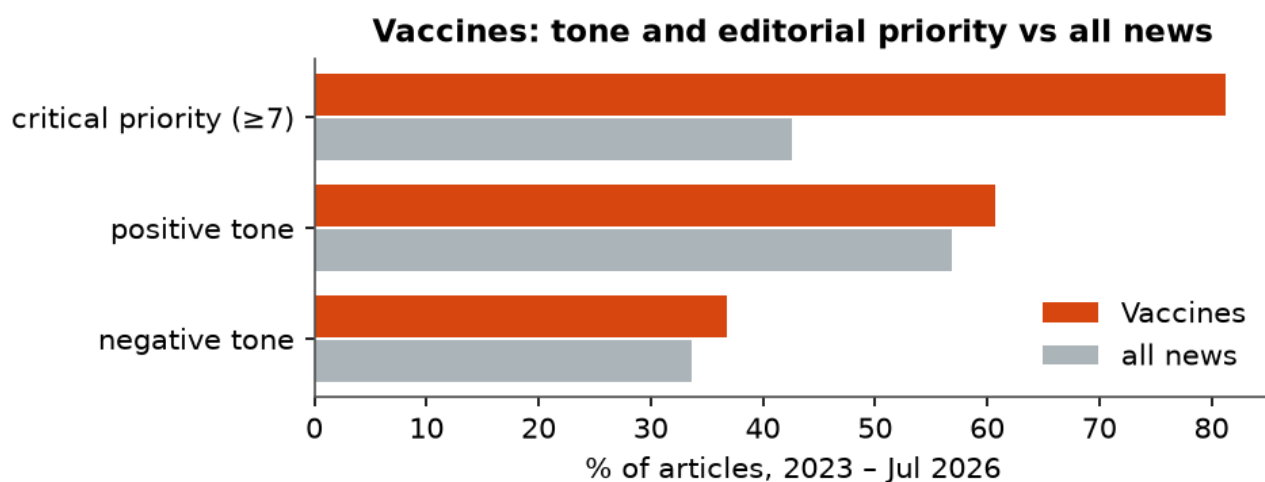


Figure 8. Tone and the share rated critical priority, vaccine articles vs all news, 2023 – Jul 2026.

Themes show what vaccine stories are about (Table 6). Even in 2023–2026, COVID-19 vaccine development and trials (34.62% of themed articles) and COVID-19 vaccination campaigns (20.15%) are the most common. Vaccine hesitancy and public perception appear in 8.69%, mandates and policy debates in 4.97%, and countering vaccine myths and misinformation in 4.2%. Veterinary vaccines account for 3.17%.

Theme	Articles	Share %	Lift
covid-19 vaccine development and efficacy trials	50,354	34.62	208.83
covid-19 vaccination campaigns and rollout strategies	29,314	20.15	197.48
vaccine research and production methods	16,282	11.19	149.09
vaccination programs and efficacy studies	14,888	10.23	258.08
immunization schedule guidelines by age group	13,108	9.01	243.51
vaccine hesitancy and public perception	12,642	8.69	232.07
pediatric vaccination requirements	12,217	8.4	246.25
vaccine mandates and policy debates	7,232	4.97	235.43
vaccine myths and misinformation countermeasures	6,114	4.2	233.54
veterinary vaccines and zoonotic disease prevention	4,618	3.17	250.24
vaccine equity and access in low-income regions	4,235	2.91	247.45

Table 6. Most common themes in vaccine news, with lift against all themed news, January 2023 – July 2026.

The organisations named most often include the Centers for Disease Control and Prevention (13,257 articles), Pfizer (12,783), Moderna (10,744), the World Health Organization (10,023) and the US Department of Health and Human Services (5,367). The single most frequent organisation label (19,760 articles) is the acronym CDC resolved to an unrelated group, so the true count for the US agency is higher than shown.

3.5 Research attention and invention

Research on vaccines rose and fell with the pandemic, but stayed above its earlier level. Papers with a vaccine term in the title held a stable share of about 15 per 10,000 papers from 2000 to 2018 (15.12 in 2015). The share rose to 16.91 in 2019, 38.41 in 2021 and 46.23 in 2022, 2.73 times the 2019 level. It then fell 42.8% to 26.46 in 2025, which is 1.56 times the 2019 share and 1.75 times the 2015 share. The total literature in the corpus grew by a factor of 1.0 between 2015 and 2025. Between 2015 and 2025, 176,001 such papers were published. The most-cited include the phase 3 trials of mRNA and adenovirus-vector COVID-19 vaccines [1, 2, 6], a review of mRNA vaccines [3], studies of vaccine effectiveness in mass vaccination and against variants [4, 7, 8], a global database of vaccinations [11], and surveys of vaccine acceptance and hesitancy [5, 9, 10].

News attention and research attention peaked a year apart (Figure 9). News share peaked in 2021, research share in 2022, and both fell afterwards.

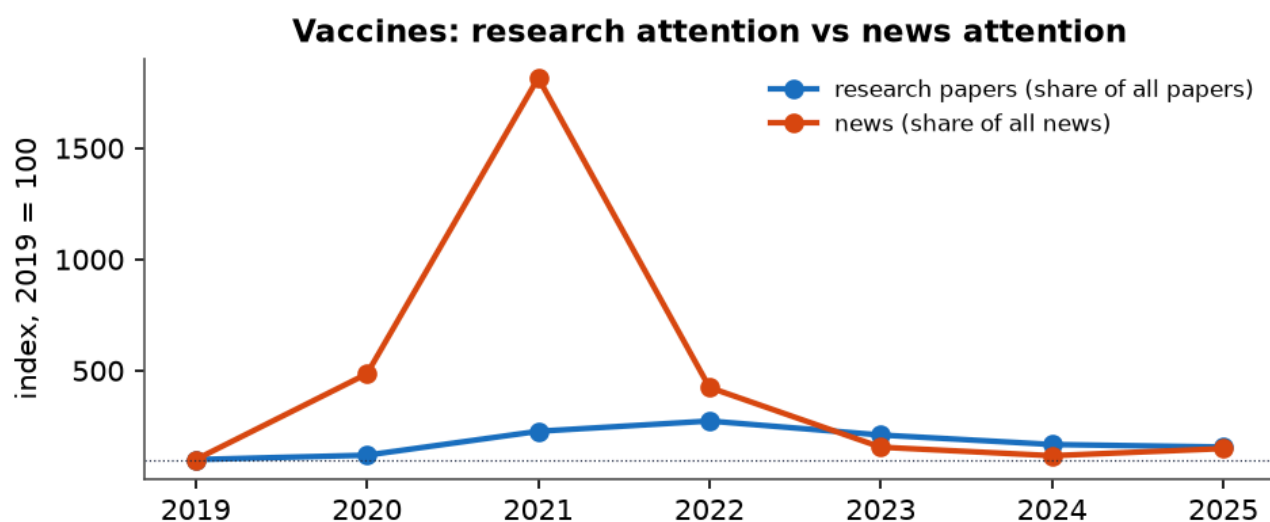


Figure 9. Research papers with vaccine terms in the title (share of all papers) and vaccine news (share of all news), each indexed to 2019 = 100.

Patenting grew more steadily: 2,162 vaccine-related patent families were published in 2015 and 3,428 in 2024 (1.59 times), with a step of 1.22 times from 2020 to 2021. China's office holds 37.9% of office filings of these families from 2015 to 2024, followed by the United States (13.5%), the international (PCT) route (12.4%) and the European Patent Office (9.9%) (Figure 10). The leading technology classes are medical preparations (A61K, 6,915 families), peptides (C07K, 2,068) and microorganisms and genetic engineering (C12N, 1,716).

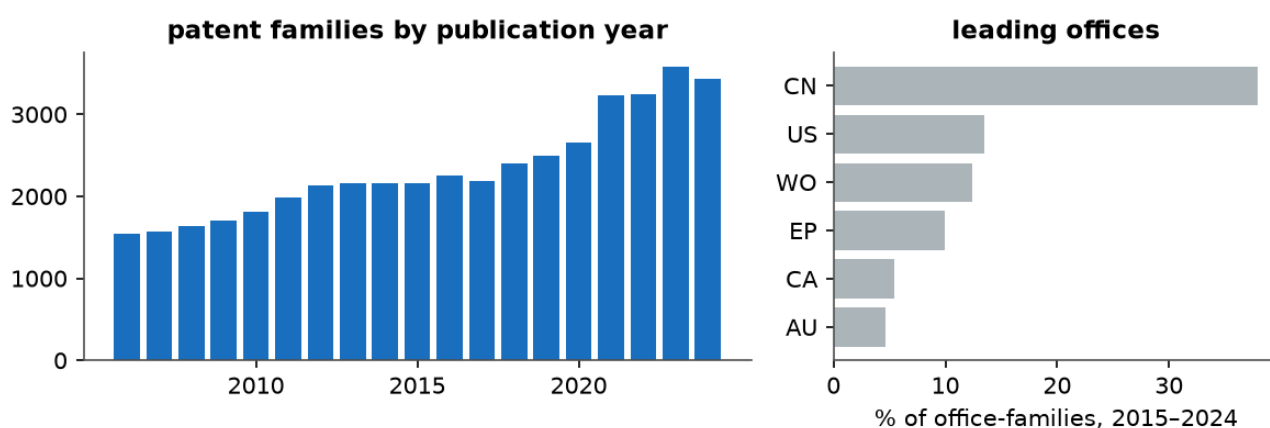


Figure 10. Vaccine-related patent families by publication year (left) and the leading filing offices, 2015-2024 (right).

4. Discussion

Three points matter for anyone who uses news as a record of vaccines. First, coverage measures attention, and attention was dominated by one period. In 2021 vaccines took 18.15 times their 2019 share of the news. Any analysis of vaccine news over this period must separate the pandemic wave from the baseline, or it will mostly describe COVID-19 vaccines. Second, the baseline moved. In 2025 vaccines took 1.49 times the share of news they took in 2019, and the share rose from 2024 to 2025, including in the United States (from 13.44 to 33.98 per 10,000 of American news). Third, tone depends on place. Vaccine news is about as negative as news in general worldwide, but in the United States and Canada it is markedly more negative than the country's own news, while in India, Nigeria and Brazil it is less so.

Research, invention and news run on different clocks. News peaked first and fell fastest. Research peaked a year later and kept a higher share. Patent filings grew steadily, and no single office holds a majority of them. The dataset lets researchers link the three, for example to test whether shifts in national vaccine attention precede changes in vaccination coverage or in research output.

5. Limitations

- **Index availability.** 92.88% of the index was readable at build time, so counts are lower bounds. Shares and lifts are less affected, because the missing part is spread across topics.
- **Coverage after May 2026.** The index thins after May 2026, so 2026 is partial and is excluded from year comparisons.
- **Matching.** Matching uses the article opening. Articles that mention vaccines only later are missed, and 7.5% of matches are not substantively about vaccines. In 30% of matches vaccines are not the main subject; many are COVID-19 stories that mention vaccination status.
- **Machine labels.** Location, tone, priority, themes and organisations are machine-labelled. The city field is noisy and is not analysed. One frequent organisation label is a mis-resolved acronym.
- **Place tags from ordinary words.** Place tags derived from ordinary words ("Congress", "Earth", "Winter" and others) were treated as unlocated, which removes 15.3% of city-tagged articles. Location counts are therefore lower bounds, and some remaining tags (such as "Gallup" or "Lyme") still place articles through names rather than places.
- **Outlet mix.** The index over-represents English-language outlets and the United States. This shapes both the country shares and the tone baseline.
- **Research and patent counts.** These match titles only. Office shares reflect filing practice.

Data availability

The dataset (article sample, monthly and country tables, research and patent tables, all metrics) is released under CC BY-NC 4.0 with this paper. The sample holds 91,643 of 1,097,433 matched articles to 31 July 2026. Full article text, headlines, publishers, later articles and other topics are served by the Prism News API: <https://github.com/fliarbi/prism-news-api> (base URL <https://radar-api.fliarbi.com/news>). A worked query: `prism-news trends "vaccine" --since 2019-01-01 --until 2026-07-31 --granularity monthly`.

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