OpenPharma

Poster number

PRC22-0654

Open Access and Copyright License Status of Pharmaceutical Company-Supported Articles

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WHY WAS THIS NEEDED?

- Open access (OA) to research published by pharmaceutical companies can improve transparency and foster trust.[1]
- However, there is no publicly available automated tool to assess OA publication rates across pharmaceutical companies, or those in other sectors.

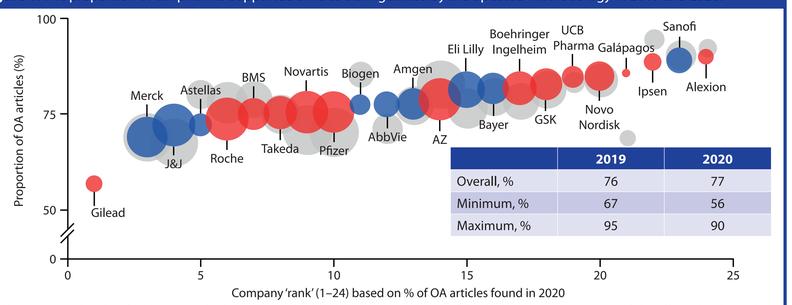
WHAT DID WE DO?

- We updated a previously described methodology[2] by introducing a new approach to identifying the type of publication (e.g. journal article, review, letter).
- The new approach aimed to obtain a cleaner data set by correctly identifying publication types and excluding certain formats by using article type metadata supplied by Embase.
  - Conference abstracts and letters were excluded, because these are typically less likely to be OA and therefore outside the scope of most OA policies.
- OA rates from 2019 and 2020 for published articles that were supported by the top 20 pharmaceutical companies were analyzed with the new method.[3]
  - Any Open Pharma Member/Supporter companies outside the top 20 were also included.[4]

WHAT DID WE FIND?

- As expected, fewer articles were identified with the updated method (5093) than the original method (6900) for 2019.
- Overall OA rates in 2019 determined using the updated method were higher (76%) than the original method (69%).
- This suggests that abstracts and letters were successfully excluded by using Embase metadata to identify the article type.
- OA rates for individual companies determined using the new methodology are shown in **Figure 1**.
- The most popular license types of published pharmaceutical company-supported articles were CC BY-NC-ND (29%) and CC BY (28%) (**Table 1**).

Figure 1: The proportion of OA pharma-supported articles distinguished by the updated methodology in 2019 and 2020.



	2019	2020
Overall, %	76	77
Minimum, %	67	56
Maximum, %	95	90

Bubbles represent total number of articles associated with the company. Grey bubbles represent 2019 OA rates. Colored bubbles represent 2020 rates, with Open Pharma Members and Supporters marked in red (other companies analyzed in blue). Three companies (Ipsen, Galápagos and Takeda) have mandated OA as of 2022. Please access the interactive poster to see in-depth figure details.
AZ, AstraZeneca; BMS, Bristol Myers Squibb; GSK, GlaxoSmithKline; J&J, Johnson, Johnson & Janssen; OA, open access.

Table 1: OA license types of pharmaceutical company-supported OA articles in 2019 and 2020.

OA license type	Number of articles (%)
CC BY	2321 (28)
CC BY-NC	1606 (19)
CC BY-NC-ND	2400 (29)
No data[a]	1692 (21)
Other[b]	223 (3)

[a]Bronze OA articles (free to read on the publisher's website, without a license that grants any other rights) almost never disclose a copyright license. Other missing data are mostly green OA (which have been archived in an OA repository separate to the publisher's site). [b]Author choice/editor's choice usage agreement: CC, CC BY-NC-SA, CC BY-SA, CC BY-ND; Elsevier-specific: OA user license, implied OA, public domain, publisher-specific license (as categorized by Unpaywall).
CC BY, Attribution; CC BY-NC, Attribution-NonCommercial; CC BY-NC-ND, Attribution-NonCommercial-NoDerivs; CC BY-NC-SA, Attribution-NonCommercial-ShareAlike; CC BY-SA, Attribution-ShareAlike; OA, open access.

METHODS

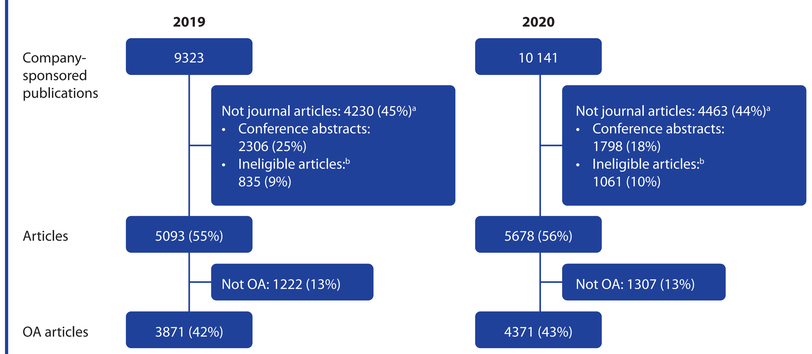
1
- Identify pharmaceutical-company-associated publications in **Lens.org** (a scholarly search aggregator)[5]
  - With tag 'medicine'
  - Export DOIs

2
- Run DOIs through **Embase**,[6] to select only articles
  - Exclude all other publication types
  - Remove companies with < 10 articles

3
- Get OA status via **Unpaywall** (a database of OA articles)[7]
  - By running DOIs of articles through search engine

DOI, digital object identifier; OA, open access.

PUBLICATIONS ANALYZED



[a]All % values represent proportion of total publications identified in the initial search. [b]Ineligible articles are conference papers, letters, reviews, editorials, errata, notes (as categorized by Embase).
OA, open access.

STRENGTHS

- Full article-level analysis for Ipsen revealed the methodology to be broadly accurate, and identified reasons for misclassification.
- Uses publicly available data, meaning that it is objective.
- Reproducible and automatable.

LIMITATIONS

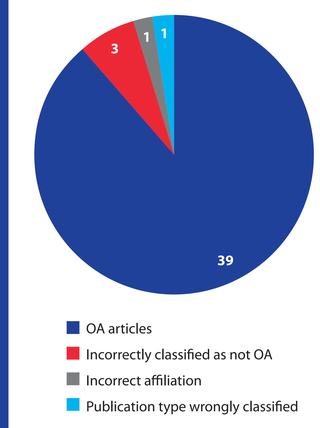
- This analysis was restricted to only those publications with pharmaceutical company authors and tagged as 'medicine'; therefore, does not encompass the full range of publications associated with the pharmaceutical industry.
- Automated classifications result in some errors.
  - AI (artificial intelligence) subject tagging of articles as 'medicine' is not always correct.
  - Lens.org sometimes fails to identify author affiliations correctly.
  - Unpaywall occasionally misclassifies articles.
  - Embase also makes occasional errors in article type classification – published congress abstracts can be classified as journal articles.

IPSEN CASE STUDY

- Since 2019, Ipsen has had an OA mandate for all affiliated scientific publications (it is the only company in this analysis that mandated OA in the analyzed period).[8]
- An internal audit showed that Ipsen met their commitment to publish all research OA in 2019.[9]
- However, this automated approach suggested an OA rate of 95% in 2019 (n = 37) and 89% in 2020 (n = 44) (**Figure 2**).
- Article-level analysis identified the reasons why seven publications were incorrectly labeled as not being OA:

- **Incorrect article classification by Embase:** publication incorrectly assigned as a journal article, so should have been excluded from the analysis
- **Incorrect OA status by Unpaywall:** articles OA but incorrectly categorized by Unpaywall
  - Feedback given to Unpaywall as a result of this analysis has helped improve their algorithms
- **Incorrect author affiliation:** articles listed with Ipsen affiliation when, in fact, the research was conducted at a previous institution; so therefore should have been excluded
- This case study confirms the internal audit finding of 100% OA rate for Ipsen in 2019 and 2020.

Figure 2: Ipsen-affiliated articles (2020) identified by the updated methodology – reasons for articles being incorrectly identified as not OA.



OA, open access.

FUTURE DIRECTIONS

- This analysis could be used to monitor funder compliance with OA policies.
  - As OA policies become compulsory, this analysis will give an objective measure of compliance for funders and could be used to develop a platform that will allow companies to benchmark the OA rates of their publication portfolios internally.
- Full automation could allow the easy assessment of changes in OA rates over time.
- Can be easily extended to analyze OA type (green, gold, etc.) of articles, or variations in OA rates across therapy areas.
- The copyright license type analysis could be used to measure what proportion of OA articles prevent commercial reuse.

REFERENCES

1. Ross *JS et al. Am J Public Health* 2012;102:72–80.
2. Freeman H *et al. Curr Med Res Opin* 2021;37(Suppl 1):21–39.
3. Sagonovsky E. The top 20 pharma companies by 2020 revenue. 2021. Available from: https://www.fiercepharma.com/special-report/top-20-pharma-companies-by-2020-revenue (Accessed August 8, 2022).
4. Open Pharma. About Open Pharma. Available from: https://openpharma.blog/about-us/ (Accessed August 8, 2022).
5. Lens.org. Available from: https://www.lens.org/ (Accessed August 8, 2022).
6. Ovid – Embase. Available from: https://ovidsp.dc2.ovid.com/ (Accessed August 8, 2022).
7. Unpaywall. Simple query tool. Available from: https://unpaywall.org/products/simple-query-tool (Accessed August 8, 2022).
8. Ipsen Pharma. Ipsen commits to making all its published scientific research freely accessible to everyone. Available from: https://www.ipsen.com/ipsen-commits-to-making-all-its-published-scientific-research-freely-accessible-to-everyone/ (Accessed August 8, 2022).
9. Page S *et al.* Open sesame! Evaluation of an open access commitment on manuscripts affiliated to a mid-sized pharmaceutical company. 2020 European Meeting of the International Society for Medical Publication Professionals (ISMPP); 21–22 January 2020, London, UK.

ACKNOWLEDGMENTS

We thank the Members and Supporters of Open Pharma for their input and insightful discussions surrounding our analysis.

FUNDING

This work was produced by representatives of Open Pharma. Open Pharma is a multisponsor collaboration facilitated by Oxford PharmaGenesis Ltd and receives sponsorship funding from Alexion Pharmaceuticals Inc, AstraZeneca Pharmaceuticals LP, Boehringer Ingelheim International GmbH, E.R. Squibb & Sons LLC, F. Hoffmann-La Roche AG, Galápagos NV, Gilead Sciences Inc., GlaxoSmithKline Biologicals SA, Ipsen Biopharm Ltd, Janssen Global Services LLC, John Wiley & Sons Ltd, Novartis Pharma AG, Novo Nordisk A/S, Pfizer Inc., Takeda Development Center Americas Inc. and UCB Biopharma SRL.

DISCLOSURES

EB (https://orcid.org/0000-0001-8982-0627), TK (https://orcid.org/0000-0001-6152-7365) and TR (https://orcid.org/0000-0003-0221-0098) are employees of Oxford PharmaGenesis. VP (https://orcid.org/0000-0002-7444-6027) was an employee and shareholder of or held stock or stock options in Takeda Development Center Americas, Inc., and is now an employee of UCB. SB (https://orcid.org/0000-0001-8072-5690) is an employee of and may hold stock in Galápagos NV. LM (https://orcid.org/0000-0003-4555-8123) is an employee and stockholder of Alexion, AstraZeneca Rare Disease. At the time of abstract development, WG (https://orcid.org/0000-0002-9733-6330) was an employee and shareholder of or held stock or stock options in Ipsen and is now an employee of Bristol Myers Squibb.

ROLE OF FUNDER/SPONSOR

The funding organizations involved in this work facilitated: the design and conduct of the study; the collection, management, analysis, and interpretation of the data; the preparation, review, and approval of the abstract. They were involved in the decision to submit the abstract for presentation.

Presented at the 9th International Congress on Peer Review and Scientific Publication, September 8–10, 2022, Chicago, IL, USA

Data previously presented at the 2022 Annual Meeting of the International Society for Medical Publication Professionals, May 9–11, 2022, Washington DC, USA

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