

Measuring open access to pharmaceutical company-supported articles – an improved and semi-automated method

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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.

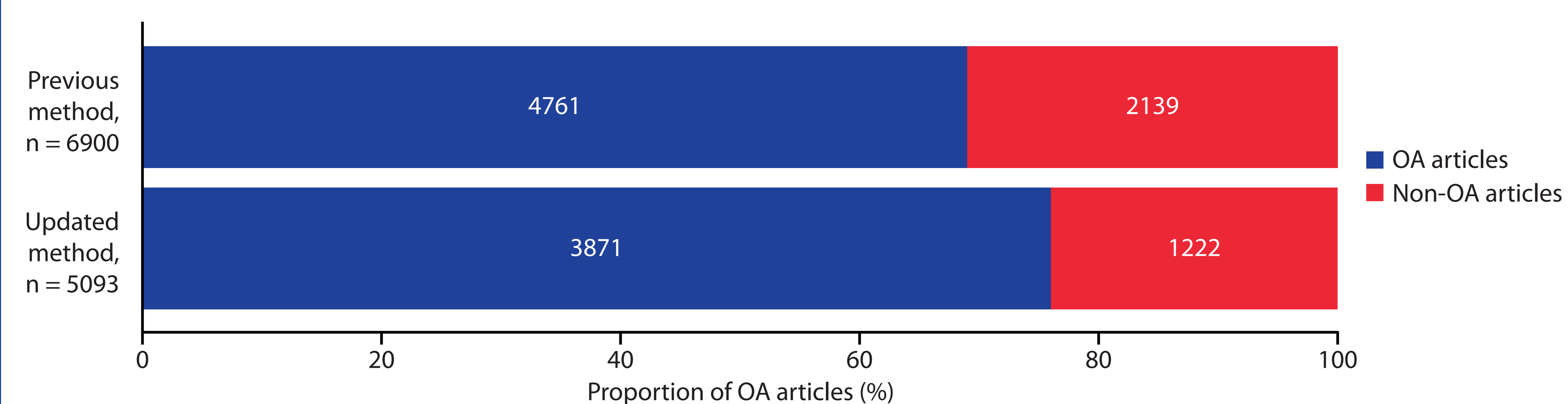
WHAT DID WE DO?

- We updated a previously described methodology² 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.
 - 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 analysed with the new method (see page 2 for more details).³
 - Any Open Pharma Member/Supporter companies outside the top 20 were also included.⁴

WHAT DID WE FIND?

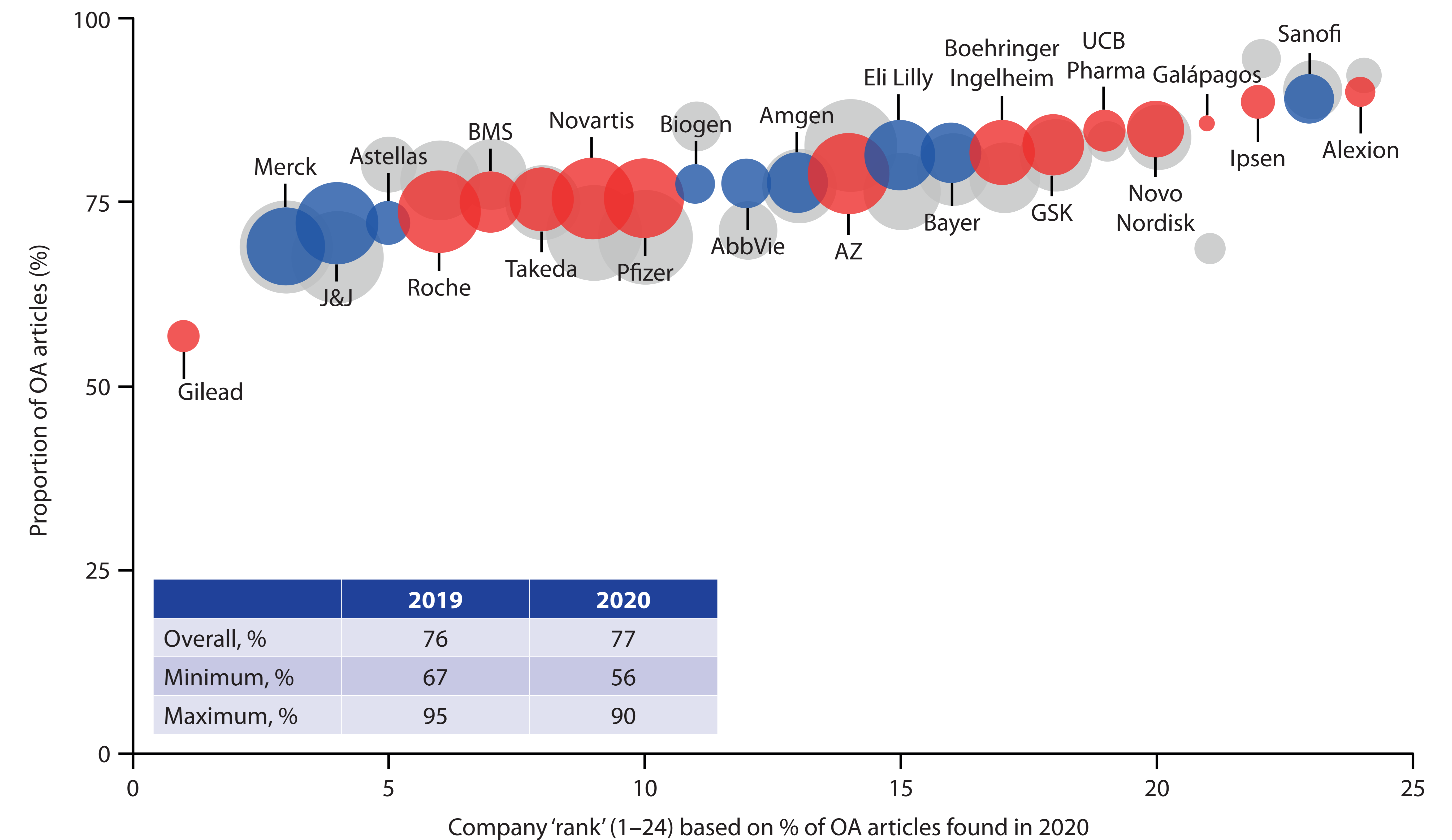
- As expected, fewer articles were identified with the updated method (5093) than the original method (6900) for 2019 (**Figure 1**).
- Overall OA rates in 2019 determined using the updated method were higher (76%) than the original method (69%).
- This suggests that abstracts and letters were successfully excluded.
- OA rates for individual companies determined using the new methodology are shown in **Figure 2**.

Figure 1: Publications from 2019 identified as OA articles using the original and updated methods.



OA, open access.

Figure 2: The proportion of OA pharma-supported articles distinguished by the updated methodology in 2019 and 2020.



Bubbles represent total number of articles associated with the company. Grey bubbles represent 2019 OA rates. Coloured bubbles represent 2020 rates, with Open Pharma Members and Supporters marked in red (other companies analysed in blue). 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.

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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. SB (<https://orcid.org/0000-0001-8072-5690>) is an employee of Galápagos NV. LM (<https://orcid.org/0000-0003-4555-8123>) is an employee and stockholder of Alexion, AstraZeneca Rare Disease. WG (<https://orcid.org/0000-0002-9733-6330>) is an employee and shareholder of Ipsen. VP (<https://orcid.org/0000-0002-7444-6027>) is an employee and stockholder of Takeda Pharmaceuticals.



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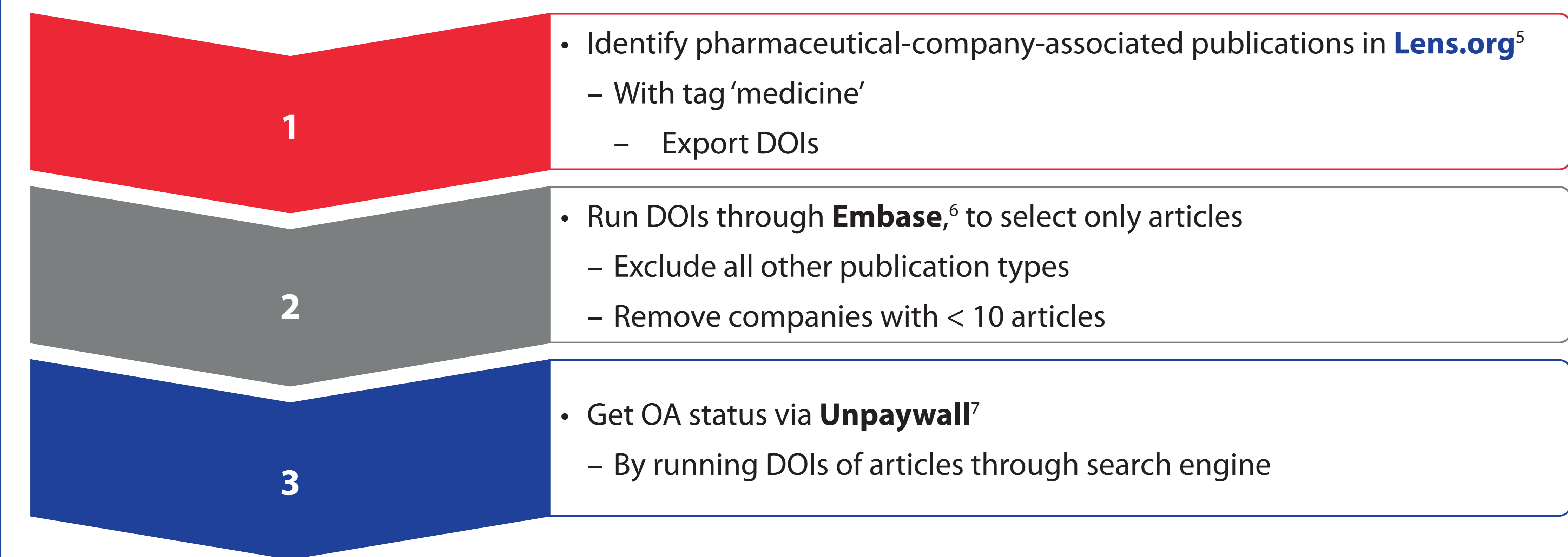
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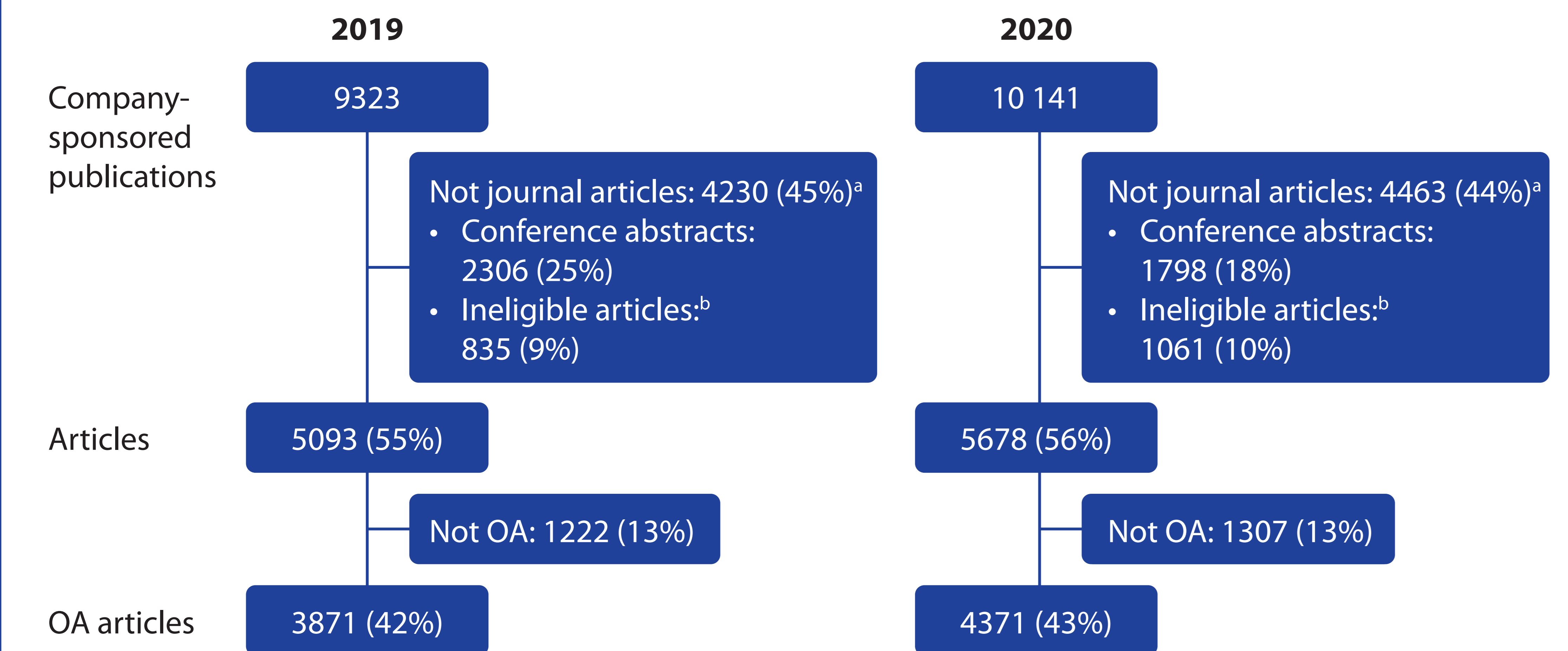


METHODS



DOI, digital object identifier; OA, open access.

PUBLICATIONS ANALYSED



^aAll % values represent proportion of total publications identified in the initial search.

^bIneligible articles are conference papers, letters, reviews, editorials, errata, notes (as categorized by Embase).
OA, open access.

IPSEN CASE STUDY

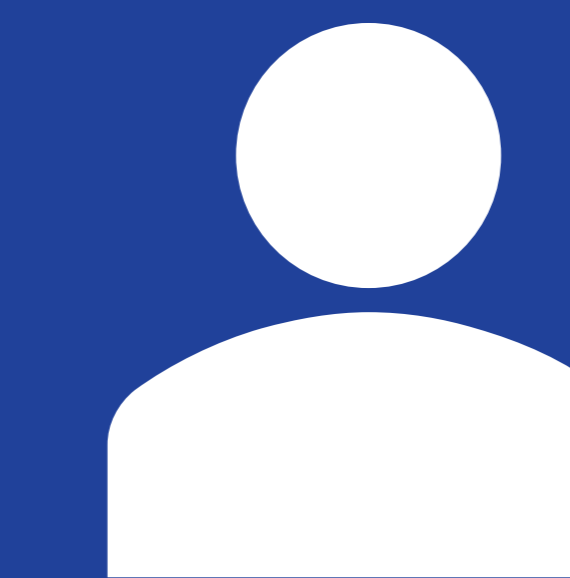
- Since 2019, Ipsen has had an OA mandate for all affiliated scientific publications.⁸
- An internal audit showed that Ipsen met their commitment to publish all research OA in 2019.⁹
- However, this automated approach suggested an OA rate of 95% in 2019 (n = 37) and 89% in 2020 (n = 44) (**Figure 3**).
- Article-level analysis identified the reasons why seven publications were incorrectly labelled as not being OA:



- **Incorrect article classification by Embase:** publication incorrectly assigned as a journal article, so should have been excluded from the analysis



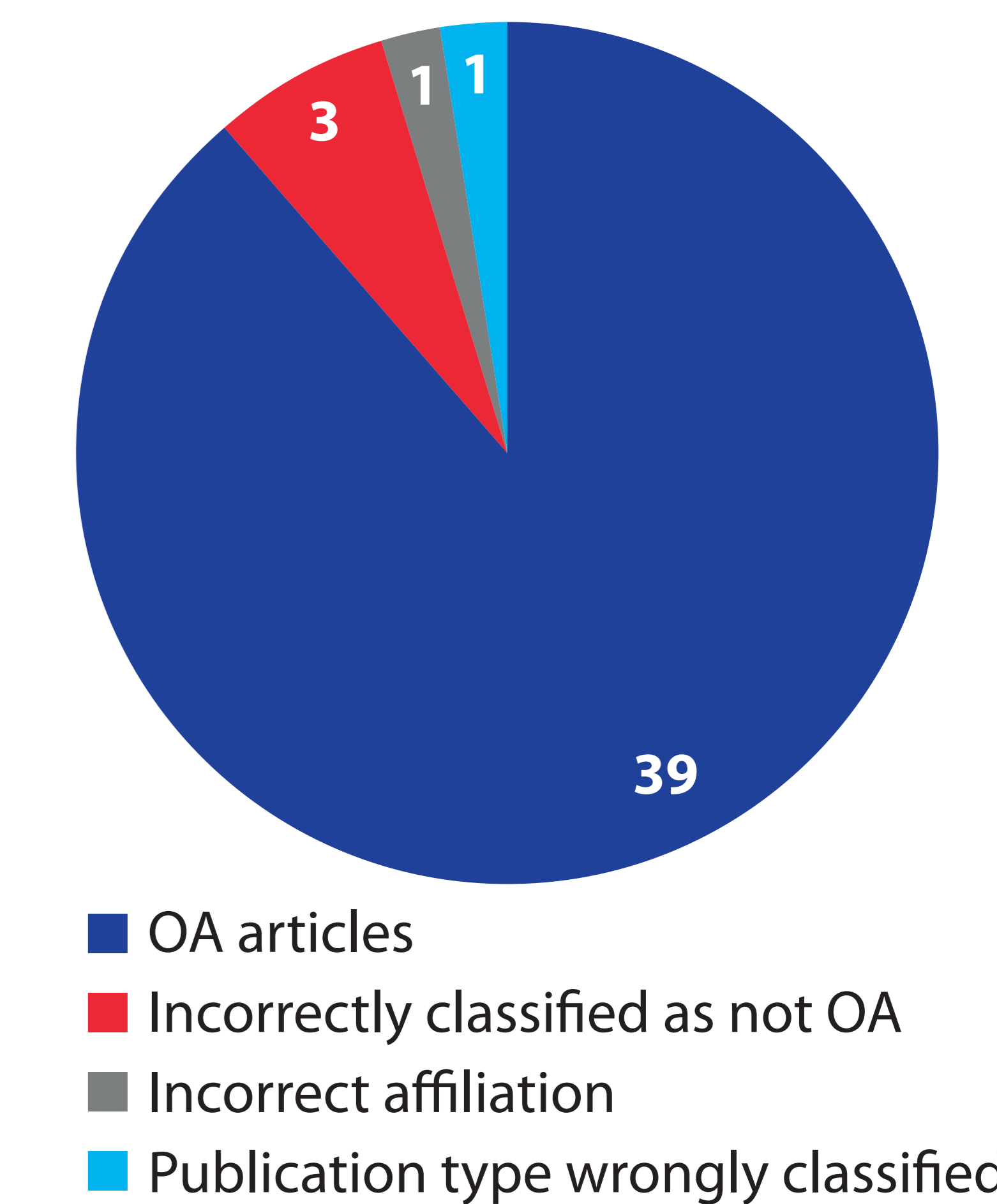
- **Incorrect OA status by Unpaywall:** articles OA but incorrectly categorized by Unpaywall
 - Feedback given to Unpaywall as a result of this analysis has helped improve their algorithms



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



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

- 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.

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.
- Full automation could allow the easy assessment of changes in OA rates over time.
- Can be easily extended to analyse OA type (green, gold, etc.) of articles, or copyright licence type (CC BY, CC BY-ND, etc.).