

# Wellcome and COAF open access spend 2016-17

This is our analysis of the spending by 35 organisations that received a grant from the Charity Open Access Fund (COAF) between October 2016 and September 2017.

## Overview

Every year, we ask all institutions in receipt of a grant from COAF to provide details about their open access (OA) publications and their associated article processing charges (APCs). The analysis covers research funded by:

- Arthritis Research UK
- Bloodwise
- British Heart Foundation
- Cancer Research UK
- Parkinson's UK
- Wellcome.

It provides details of the costs of OA publishing incurred by COAF and the extent to which the published articles comply with the COAF OA policy.

Overall, full compliance with the COAF policy – articles freely accessible through Europe PMC and made available under a CC-BY licence – was 87%, a reduction on last year's figure of 91%.

The cost of OA publishing continues to rise, with both hybrid and fully OA journals contributing to the growing cost.

## Cost analysis

In 2016-17, COAF funded the APCs of 3,474 articles at a cost of £7.2 million.

The number of APCs funded is slightly lower than in 2015-16. This is because:

- only 35 out of the 36 institutions in receipt of COAF funding had provided their APC data when this analysis was undertaken
- Breast Cancer Now ceased to be a member of COAF, meaning fewer researchers were eligible to apply for COAF funding.

The average APC was £2,269 and the median was £2,081 – rises of 11% and 7% respectively compared with the previous year (see table 1). This is the second consecutive year where we have seen above inflation increases in average APC prices.

This year the major factor contributing to these increases appears to be the fall in the value of sterling. For example, the APC for PLoS One is charged in US Dollars and has been \$1,495 since 1 October 2015. The average APC charged to COAF for a PLoS One article in 2015-16 was £1,100. In 2016-17 it was £1,342 – an increase of 22%.

If we look at the APC for Nature Communications, which is charged in sterling (APC £3,300 excluding VAT for the last two years), we see that the average APC charged to COAF has fluctuated by only 2% (£3,655 in 2015-16 versus £3,740 in 2016-17).

Table 1: APC spend for the years 2014-2017

#	Item	2014-15	2015-2016	2016-17
		<i>COAF data</i>	<i>COAF data</i>	<i>COAF data</i>
a	Number of articles for which an APC was paid	2942	3552	3474
b	Total cost of APCs	£5,629,970	£7,252,915	£7,881,899
c	Total Wellcome/COAF spend on APCs ( <i>some APCs' costs were split between COAF and another funder</i> )	£4,992,434	£6,600,690	£7,166,874
d	Average APC [#b/#a]	£1,914	£2,044	£2,269
e	Median APC [median of #b]	£1,834	£1,944	£2,081

Our analysis splits journals into fully OA journals (in which every article is made OA – eg PLOS One or Cell Reports) and hybrid journals (which are published under a subscription model, but where individual articles can be made OA).

Table 2 provides a breakdown of the number of publications and average and median costs by publication type.

Table 2: APC spend by publication type

	Fully Open Access journals			Hybrid journals		
Year	2014-15	2015-16	2016-17	2014-15	2015-16	2016-17
Number of articles published in:	775	1038	1,062	2,065	2,514	2,411
Average APC:	£1,396	£1,644	£1,946	£2,104	£2,209	£2,412
Median APC	£1,352	£1,397	£1,556	£2,005	£2,125	£2,310

Publication in hybrid journals remains the predominant publication route for COAF-funded researchers, with nearly 70% of articles for which an APC was levied published this way. Hybrid journals continue to be more expensive, with an average APC of £2,401 compared with £1,943 for fully OA journals.

However, the difference in the average APC of the two journal types is reducing, with the average price of fully OA journals rising faster than for hybrid journals. This year we saw average and median increases of 18% and 11% respectively for fully OA journals, versus average and median increases of 9% and 8% for hybrid journals.

Last year we also saw a large increase in the average APC of fully OA journals, the cause of which we identified to be the reclassification of Nature Communications from hybrid journal to fully OA journal. This year, we continue to see the range of fully OA APCs rise, with an increasing number of articles being published in the more expensive fully OA journals, such as Cell Reports (\$5,000), Nature Communications (£3,300) and The Lancet Public Health (\$5,000).

In last year's analysis we spoke about needing to better understand the impact of the increasing number of publisher offsetting, prepayment, discount and membership schemes. In 2017, working in partnership with Jisc and RCUK, we developed a new tab on the Jisc reporting spreadsheet to enable institutions to provide data on these schemes. 24 institutions provided this information to us, and from this we see that 695 articles (25% of the total reported by these institutions) benefitted from some form of publisher scheme and that for these articles the average APC was £1,590 (see table 3).

This average APC of £1,590 is significantly lower than the average APC for all articles (£2,269). However, included within this dataset were 56 articles reported to COAF as costing £0 to publish. These articles were predominantly published through the Springer Compact and Jisc Collections 2015-17 Wiley agreements. [Universities incur significant costs to subscribe to these deals\(opens in a new tab\)](#) and so the overall cost savings seen by the sector may not be as high as this data suggests.

With this caveat in mind, our data shows that the reductions provided are far greater for hybrid journals than fully OA journals. We believe that this is another factor contributing towards the difference in APC price rises that we see between hybrid and fully OA journals.

Table 3: articles benefiting from offsetting, prepayment, discount and membership schemes, 2016-17

	No of articles	Average APC	Total spend
Fully OA	163	£1,450	£236,321
Hybrid	532	£1,633	£868,938
Total	695	£1,590	£1,105,259

Table 4 breaks down the publication costs reported to us for the top five publishers (by volume) of COAF-funded articles published in 2016-17.

Elsevier again has the most expensive APCs, with average APCs over £3,000 – far higher than the other publishers within the top five. Elsevier is also the only publisher within the top five where the average APC for fully OA journals is greater than the average cost of their hybrid journals.

Table 4: top five publishers (by volume) of COAF-supported research and APC spend, 2016-17

Publisher	Journal type	No. articles	Average APC	Total spend
<b>Elsevier</b>	Fully OA	105	£3,331	£349,742
	Hybrid	613	£3,001	£1,839,370
Totals		718		£2,189,112
<b>Springer Nature</b>	Fully OA	442	£1,964	£868,138
	Hybrid	227	£2,004	£454,882
Total		669		£1,323,020
<b>Wiley</b>	Fully OA	19	£1,357	£25,783
	Hybrid	359	£1,979	£710,554
Totals		378		£736,336
<b>OUP</b>	Fully OA	31	£1,325	£41,079
	Hybrid	217	£2,296	£498,272
Totals		248		£539,351
<b>PLOS</b>	Fully OA	184	£1,727.29	£317,822
	Hybrid	N/A	N/A	N/A
Totals		184		£317,822

## Compliance data

In addition to understanding how much OA is costing us, we also look at whether publishers are delivering a service that enables our researchers to comply with the COAF OA policy.

In brief, the policy requires that when COAF funds are used to pay for an APC the publisher must:

- deposit the final version of the article in PubMed Central (PMC)/Europe PMC
- ensure that the article is clearly licenced CC-BY on their own site and in PMC/Europe PMC.

As in previous years, we used the [Cottage Labs compliance checking tool \(opens in a new tab\)](#) to programmatically determine whether a paper is in the Europe PMC repository and, if so, what licence is attached to it.

Compliance figures exclude articles marked as early-view/ahead-of-print as these articles have yet to be assigned to an issue and therefore cannot be deposited to PMC.

Overall compliance is 87%, lower than last year's 91% (see table 5). We had hoped to see overall compliance rise above last year's data, so we are disappointed to see it fall.

If we look at the two elements of the policy separately, the percentage of articles available via Europe PMC was 91%, while the number of articles with a correct and programmatically identifiable licence (either in Europe PMC or on the publishers website) was also 91%.

Table 5: compliance with COAF OA policy, 2015-17

	Numbers		Percentage	
	2015-16	2016-17	2015-16	2016-17
Articles for which an APC has been paid	3552	3474		
Published articles for which an APC has been paid (excluding the ahead of print articles)	3340	3382	100	100
<b>Availability in Europe PMC</b>				
Number of these articles available via Europe PMC as full text	3210	3070	96	91
<b>Presence of Correct Licence</b>				
Number of articles with a CC-BY (or CC-0) licence either in Europe PMC or on the publishers website	3122	3090	93	91

Number of articles with other licence (or no programmatically identifiable licence)	218	292	7	9
<b>Full Compliance</b>				
No. of articles for which full text available via Europe PMC with a CC-BY or CC-0 licence	3041	2931	91	87

As in previous years', hybrid journals remain the main source of non-compliance (see table 6).

Of the 409 non-compliant hybrid articles, 72% are missing from Europe PMC with the remainder available but under an incorrect or unknown licence.

We urge subscription publishers to develop better workflows to ensure that COAF-attributed articles, for which an APC has been levied, are deposited in PMC. The issue of continuing non-compliance will be considered as part of Wellcome's ongoing OA policy review.

Table 6: non-compliance – fully OA journals vs hybrid journals, 2016-17

	Published Articles for 2016-17	Non-compliant articles – total number	Non-compliant articles – expressed as a %
Fully OA journals	1062	41	4
Hybrid journals	2320	395	17
Total	3382	436	13

Analysis of the top five publishers (see table 3 above) reveals that Oxford University Press (OUP) has the largest number of non-compliant papers (see table 7). 34% of the COAF articles that they published were non-compliant with our policy.

We are disappointed to see OUP's compliance rate drop so significantly (last year only 5% of the articles they published were non-compliant) and note that they

account for 20% of the total number of non-compliant papers. The main cause of OUP's non-compliance is a failure to deposit the articles in PMC.

Table 7: non-compliance – top five publishers by volume

Publisher	Journal type	No. articles	Non-compliant	Non-compliant %)
<b>Elsevier</b>	Fully OA	105	11	10%
	Hybrid	596	66	11%
<b>Totals</b>		<b>701</b>	<b>77</b>	<b>11%</b>
<b>Springer Nature</b>	Fully OA	441	3	1%
	Hybrid	208	23	11%
<b>Totals</b>		<b>701</b>	<b>26</b>	<b>4%</b>
<b>Wiley</b>	Fully OA	19	3	16%
	Hybrid	347	35	10%
<b>Totals</b>		<b>366</b>	<b>38</b>	<b>10%</b>
<b>OUP</b>	Fully OA	31	0	0%
	Hybrid	207	81	39%
<b>Totals</b>		<b>238</b>	<b>81</b>	<b>34%</b>
<b>PLOS</b>	Fully OA	184	0	0%
	Hybrid	N/A		
<b>Totals</b>		<b>184</b>	<b>0</b>	<b>0%</b>

## Conclusions and actions

Overall compliance with the policy is 87%. We're disappointed not to see last year's rise continue. As in previous years, we'll be working with publishers and institutions to ensure that articles are made compliant as soon as possible.

This year, OUPs compliance rate has fallen significantly. While OUP notified us of the issues they were experiencing in outputting content to a standard compliant with PMC's technical requirements, this is the first time we could see the scale of the problem due to the retrospective nature of our data analysis. OUP have assured us that the problem has now been resolved. We will be proactively monitoring this over the next 3-6 months to ensure that the services required as part of our publisher requirements are delivered. In addition, we plan to make an application to OUP – through their APC refund policy – to seek compensation for the poor service delivered to COAF researchers, institutions and funders over the last 12 months.

Our cost analysis continues to show a significant increase in the cost of OA publishing, with the average APC increasing by 11% on the previous year. We believe that the devaluation of sterling is the major contributing factor to this. The difference in average APCs for hybrid and fully OA journals is narrowing. Our data

suggests that the increasing popularity of high-cost fully OA journals combined with the larger discounting of hybrid journal APCs through publisher schemes is contributing to this.

While the new reporting template enabled us, for the first time, to understand the impact of publisher schemes on the costs of APCs, not all institutions reported data on this. We encourage all institutions to submit this information as part of future COAF returns, so we can increase our understanding of these deals.

Overall, the data reported in this article will be used to inform the [Wellcome OA policy review](#) that we are currently undertaking. The ongoing issue of articles not being deposited in PMC (or deposited with the wrong licence) – most prevalent amongst hybrid OA journals – is something we will be considering. We expect to report the outcomes of this review in autumn 2018.

#### Note

The data used for this analysis was provided by institutions in November 2017. The analysis was carried out using Wellcome's CottageLabs Compliance Tool on 8 and 13 March 2018. The analysis was conducted using the raw data provided by institutions. While every effort has been made to provide accurate information, there may be errors within the analysed data. Where errors are identified, we will endeavour to make corrected versions of the data available.

The raw data used for this article is freely available on Figshare.