

PUBMED AS A PUBLIC INTERFACE FOR MEDLINE

ASSESSING WHETHER PMC HAS CHANGED PUBMED'S COMPOSITION

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OBJECTIVE

Has PubMed Central (PMC) changed the proportion of MEDLINE-indexed records in PubMed?

BACKGROUND

PubMed has delivered a public interface for MEDLINE since 1997.¹ Since 2000, PMC has been a permanent archive of full-text life sciences and biomedical journal articles, all of which are included in PubMed.²

Fig 1. PubMed's Overall Composition, Dec 2017



Questions arose recently about the quality of PubMed, due to PMC becoming a growing component.³ One area of concern was the potential lack of quality in PMC **full participation journals**; another concern was the inclusion of **author manuscripts** submitted for compliance with national funders' public access mandates. We tested these claims by evaluating MEDLINE-inclusion rates in PMC and PubMed, whether the rates in PubMed have shifted over time, and whether this could be attributed to author manuscript submissions in PMC.

METHODS

We evaluated the proportion of PubMed records indexed in MEDLINE prior to and during the growth of PMC (1990, 2000–2017) and whether a trend could be due to the incorporation of PMC records. We used z-tests with Bonferroni-adjusted *p*-values.

Data are available at <https://doi.org/10.18738/T8/XTYSHI>

Further findings are available at <https://doi.org/10.5195/jmla.2019.433>

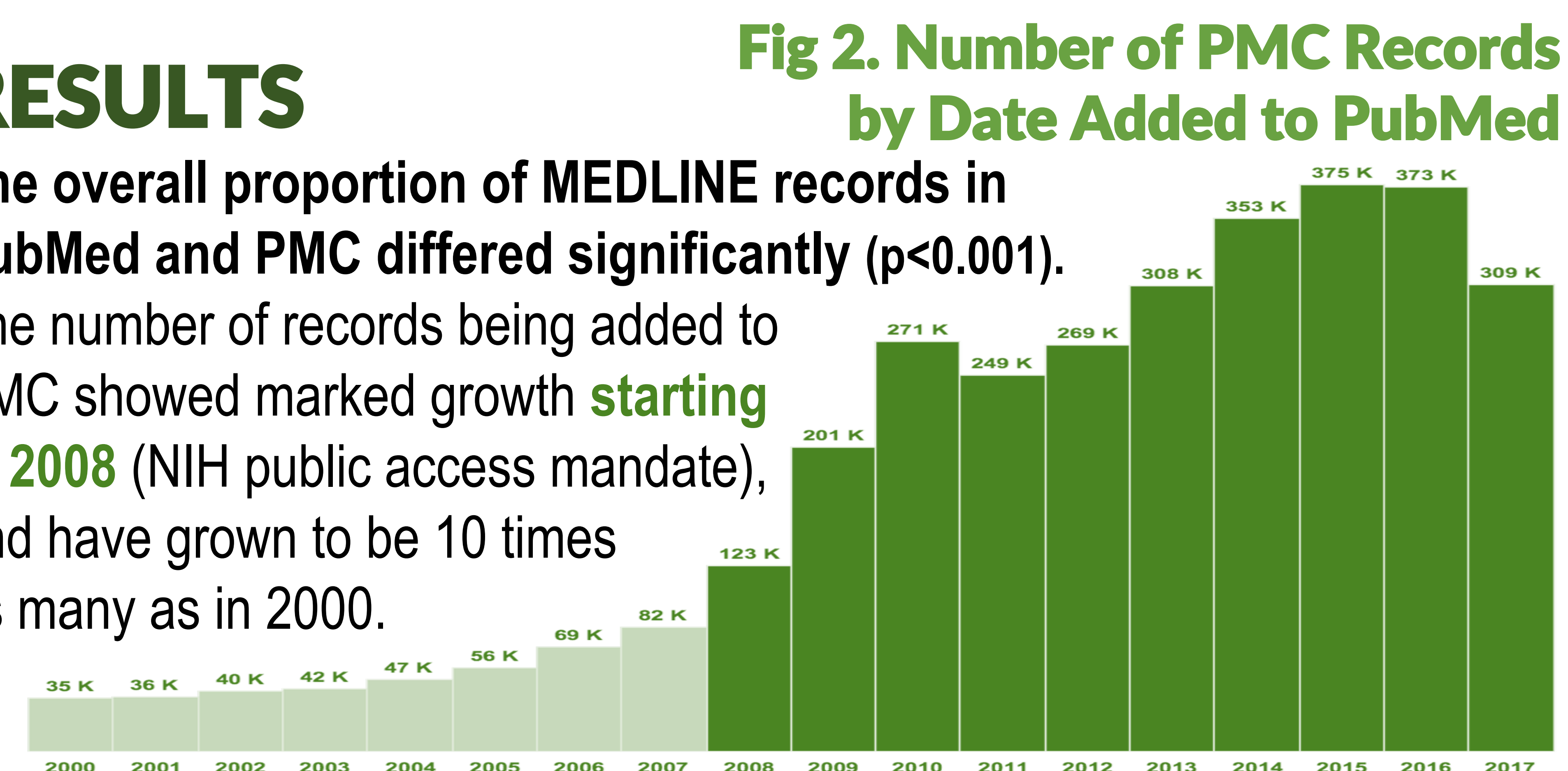
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2. National Library of Medicine. PMC overview. The Library; 2011. <https://www.ncbi.nlm.nih.gov/pmc/about/intro/>
3. Anderson K. A confusion of journals — what is PubMed now? Scholarly Kitchen. 7 Sep 2017. <https://scholarlykitchen.sspnet.org/2017/09/07/confusion-journals-pubmed-now/>

RESULTS

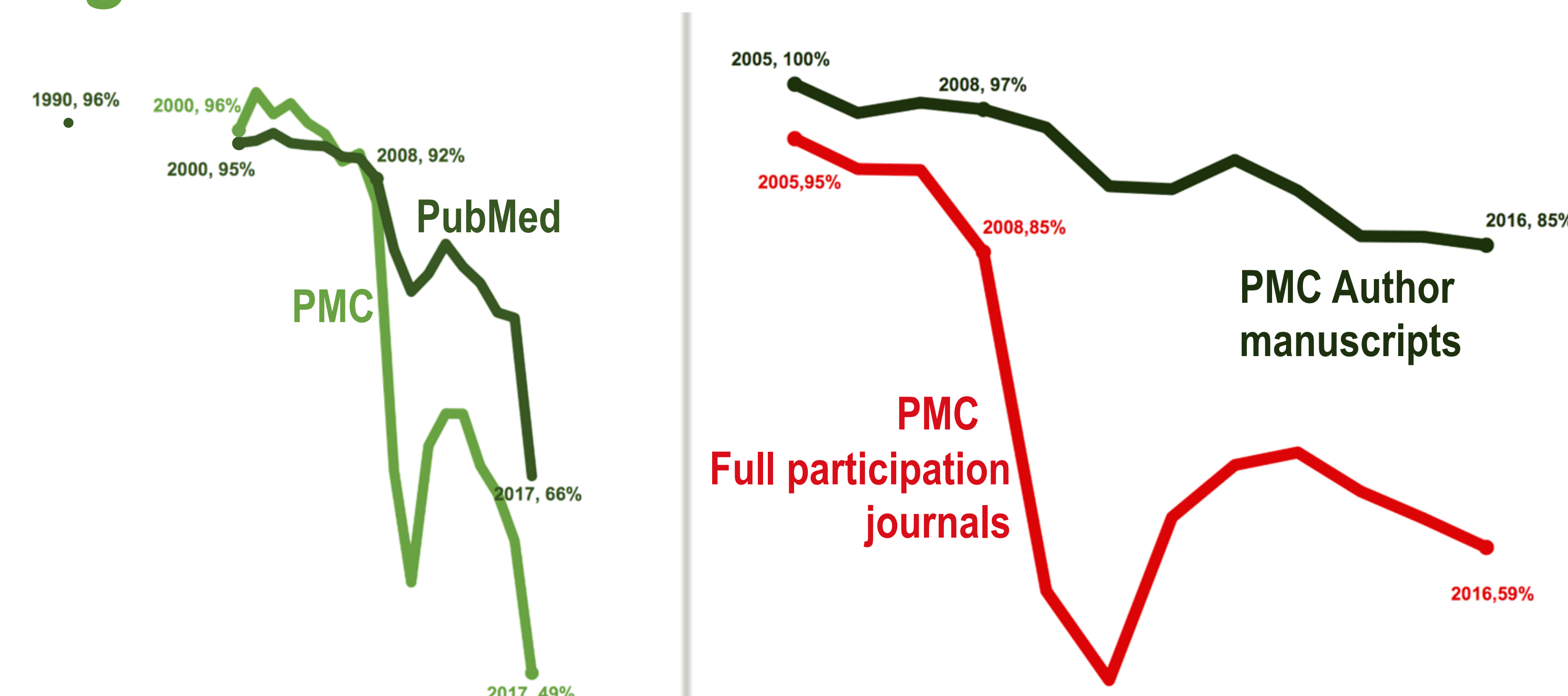
The overall proportion of MEDLINE records in PubMed and PMC differed significantly ($p < 0.001$).

The number of records being added to PMC showed marked growth starting in 2008 (NIH public access mandate), and have grown to be 10 times as many as in 2000.



Each year, progressively smaller proportions of PMC records were indexed in MEDLINE, and the trend was similar for PubMed.

Fig 3. Percent of New MEDLINE-Indexed Records



PMC Components: Author manuscripts make up 12% of PMC records (2% of PubMed), and the MEDLINE-indexing rate remained high over time – 15% of author manuscripts added in 2016 were **not** in MEDLINE journals. Journal submissions, particularly from **full participation journals**, multiplied after 2008, and the MEDLINE-indexing rate fell to one half.

CONCLUSIONS

In order to be attractive to grant-funded authors, more non-MEDLINE-indexed journals are participating in PMC by proactively submitting full issues, reducing MEDLINE rates in PMC and PubMed. Further research critically appraising PMC articles is needed to determine if the quality of literature in PubMed has changed.