



PubMed 2.0

Jacob White

To cite this article: Jacob White (2020) PubMed 2.0, Medical Reference Services Quarterly, 39:4, 382-387, DOI: [10.1080/02763869.2020.1826228](https://doi.org/10.1080/02763869.2020.1826228)

To link to this article: <https://doi.org/10.1080/02763869.2020.1826228>



Published online: 21 Oct 2020.



Submit your article to this journal [↗](#)



Article views: 666



View related articles [↗](#)



View Crossmark data [↗](#)

ONLINE UPDATES

Emily Vardell, Column Editor



PubMed 2.0

Jacob White

A.R. Dykes Library, The University of Kansas Medical Center, Kansas City, USA

ABSTRACT

After years of strategic planning, the National Library of Medicine has introduced an updated and redesigned version of its PubMed health sciences research website. The new website features a more modern and responsive interface, especially on mobile devices. Tools and features have been relocated to make them more intuitive for new users. While not without some turbulence and slight discomfort for long-time users adjusting to the modernized interface and search engine, the new version of the PubMed website introduced in 2020 succeeds in the website's time-honored task of collecting and making freely accessible high-quality health sciences information and resources.



KEYWORDS


National Library of Medicine; online databases; PubMed; review

Background

PubMed is the premier research database for the health sciences. Produced by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine, PubMed is used by health care researchers, practitioners, and students around the globe. An updated version of the PubMed website was released in early 2020. The new home page is more responsive to modifying the dimensions of the window on a desktop, and features are easier to access and use on the mobile version. The three primary columns on legacy PubMed—"Using PubMed," "PubMed Tools," and "More Resources"—have been replaced with "Learn," "Find," "Download," and "Explore." Changing the headings of these columns to action verbs related to information use makes PubMed more accessible for beginners and better advertises PubMed's features (Figure 1).

The new PubMed website offers the same information resources as the previous version, namely MEDLINE, PubMed Central, and a collection of free e-books on health sciences topics.¹ In total, this adds up to over 30 million citations, sourced from over 5,300 journals currently indexed in

CONTACT Jacob White  jwhite14@kumc.edu  A.R. Dykes Library, The University of Kansas Medical Center, 3901 Rainbow Blvd., Mail Stop 1050, Kansas City, KS 66160 USA.

Comments and suggestions should be sent to the Column Editor: Emily Vardell  evardell@emporia.edu.

© 2020 The Author(s). Published with license by Taylor & Francis Group, LLC

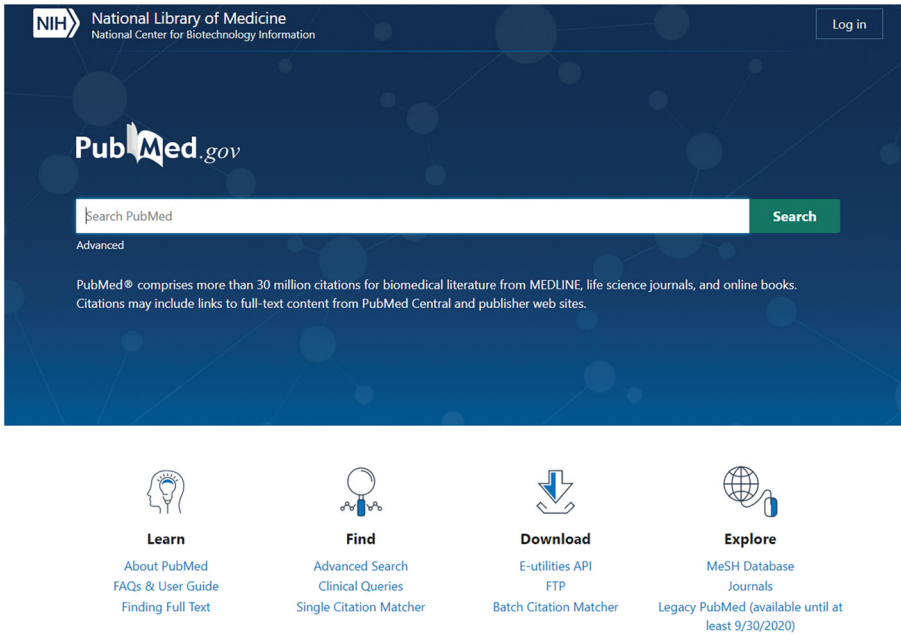


Figure 1. The new PubMed home page.

MEDLINE and nearly 3,000 journals that have deposited material into PubMed Central. These resources continue to provide value added over other free search tools due to the rigor of the selection process for inclusion into MEDLINE and the strength of the Medical Subject Heading (MeSH) thesaurus, a term index carefully maintained by the NCBI and updated late in each calendar year. The National Center for Biotechnology Information also responded to analytics indicating that about one in three PubMed searches includes an author name.² PubMed now features faster citation matching abilities but still remains a viable tool for creating a bibliography.

The new PubMed emphasizes minimal strategizing or search building prior to carrying out the search. The new PubMed training material discourages the use of special characters or Boolean operators in the construction of the initial search. Among these is the “Results by Year” graph, which allows the researcher to track trends easily in the literature or filter by a specific year (see Figure 2). Article type, text availability, age, and language filters are among the popular tools carried over from the old PubMed. PubMed basic search encourages users to employ automated term mapping and displays results by best match, more closely approximating the search experience of widely used general search engines. The user’s expectation that the best result will be on the first page, with empirical data supporting that this phenomenon is exacerbated on mobile devices, was one driving factor behind the changes made to the PubMed website.²

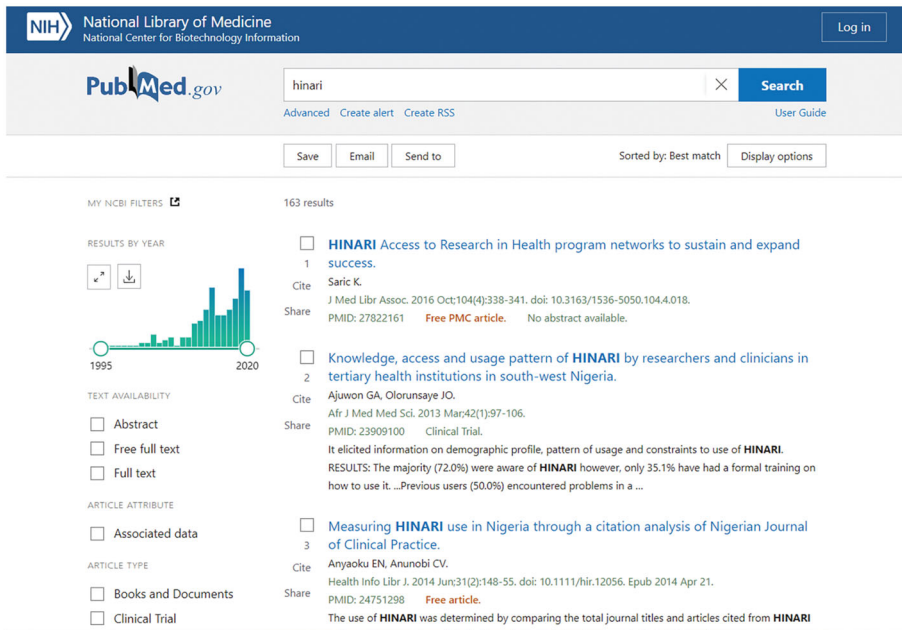


Figure 2. PubMed search results page.

PubMed mobile

One primary modification undergone by PubMed in this new update is vastly improved usability on portrait-aspect ratio devices (see Figure 3). The previous version of PubMed required users to rotate their mobile devices back and forth from portrait to landscape to comfortably type a search query and then view a results list. While many of the latest smartphones feature large, high-definition displays, using PubMed on older and smaller smartphones is neither tenable nor sustainable in the long term, driving users to other information resources that are either subscription based or lack the quality control elements many health sciences researchers value from PubMed compared to other freely available search tools.

PubMed's new, mobile friendly website is aesthetically pleasing and neatly organized. Longtime users of PubMed should find it familiar enough to navigate, and students and other new users will find it intuitive and responsive. Importantly, the new website affirms NCBI's values of providing free access to the MEDLINE bibliographic index for improving one's health at both the personal and the global levels. In many parts of the world, mobile devices remain the primary method of accessing the web. In resource-limited environments, the new PubMed could have a positive impact on evidence- and statistics-based healthcare delivery. Programs specially designed for information access in resource-limited environments, such as HINARI³, may see an increase in engagement as healthcare

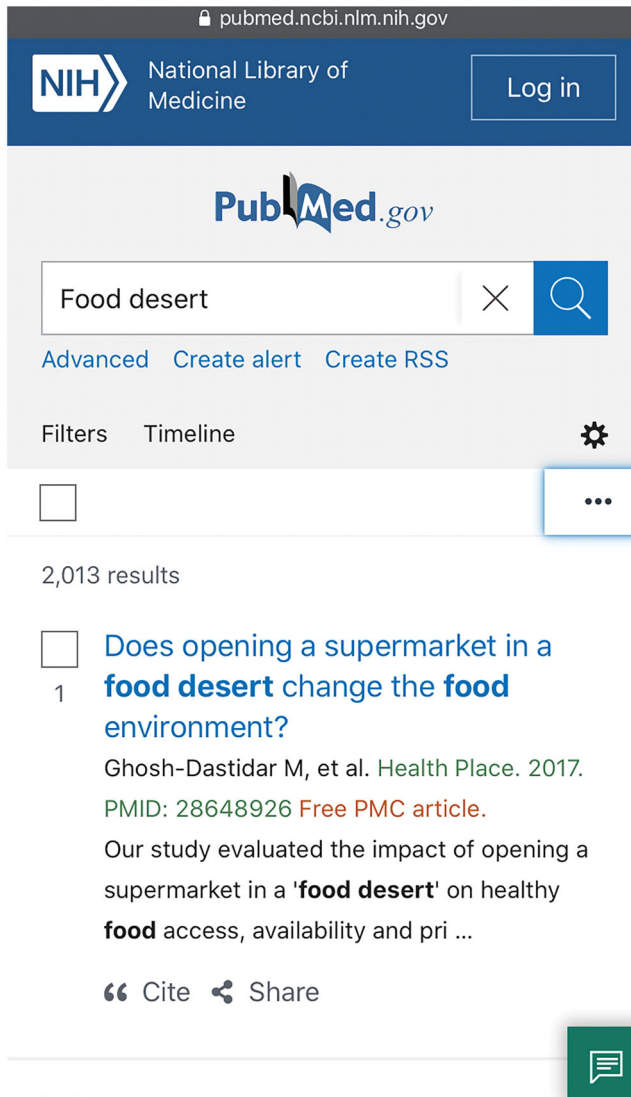


Figure 3. PubMed interface on a mobile device.

practitioners are able to more easily find citations in PubMed on their mobile devices.

Comparison with other tools

With its vast coverage and freely accessible website, PubMed is by far the most commonly used online database in health sciences learning environments. A link for full-text access to PubMed is a staple of health sciences library home pages. For millions of researchers, students, clinicians, and members of the general public, PubMed is the front door to the health sciences literature. That being said, there are types of research inquiries that may

be better served on an alternative platform to MEDLINE, or even on search engines with undefined coverage and less transparent search algorithms.

One such case, which NCBI has acknowledged and is working toward ameliorating, is when trying to find research output from a specific section of a journal.² For instance, *Plastic and Reconstructive Surgery* has a section called “Hand/Peripheral Nerve.” This information is not included in the MEDLINE indexing for this journal, so no search strategy can capture that specific article set. The transparency and ease of access to metadata in PubMed remains one of its great strengths, and the ability to easily generate a formatted citation from a PubMed entry page is valuable for novice researchers who do not use a citation manager. However, because PubMed metadata is not as comprehensive as Google Scholar full web page indexing, searches seeking articles from a specific section of a journal are, for now, best carried out in Google Scholar.

While there are forms of bibliometric research or comprehensive searching that may require alternative resources, clinicians continue to appreciate certain PubMed features, such as Clinical Queries, for providing helpful filters and rapid access to necessary clinical information.⁴ Combined with an improved mobile interface, some librarians may be inclined to collaborate with educators to encourage the use of PubMed Clinical Queries in educational settings where students currently use proprietary information resources considered less appropriate for that context.⁵ Librarians might collaborate with problem-based or case-based learning instructors to guide students to Clinical Queries early in their studies, encouraging access to a free resource they will have access to throughout their careers.⁶

Conclusion

The PubMed/MEDLINE/MeSH resources provided by NCBI are terrific educational and research resources that open the door to more complex navigation for health sciences information seekers. Understanding how bibliographic databases, term thesauri, and search filters operate is fundamental to confidently navigating published biomedical research and carrying out complex projects such as systematic reviews. Resources such as Ovid MEDLINE and Embase.com have better tools for power users, such as adjacency, suggested synonyms, and combined search history/results pages, making them the preferred domain for expert literature searchers^{7,8} and those with more specific needs. However, PubMed/MEDLINE remains the premier research website for the global healthcare community, and the updates rolled out by NCBI at the beginning of 2020 should have a lasting positive impact on patient safety, quality improvement, and evidence-based practice worldwide.

Notes on contributor

Jacob White, MLS (jwhite14@kumc.edu) is a Health Sciences Librarian in the School of Medicine Liaison at A.R. Dykes Library, The University of Kansas Medical Center, Kansas City, KS 66160 USA.

References

1. “PubMed Help [Internet].” Bethesda National Center for Biotechnology Information (2005).
2. Fiorini, Nicolas, David J. Lipman, and Zhiyong Lu. “Towards PubMed 2.0.” *eLife* 6 (2017): e28801. doi:[10.7554/eLife.28801](https://doi.org/10.7554/eLife.28801)
3. Saric, Karin. “HINARI Access to Research in Health Program Networks to Sustain and Expand Success.” *Journal of the Medical Library Association: JMLA* 104, no. 4 (2016): 338–341. doi:[10.3163/1536-5050.104.4.018](https://doi.org/10.3163/1536-5050.104.4.018)
4. Morshed, T., and S. Hayden. “Google versus PubMed: Comparison of Google and PubMed’s Search Tools for Answering Clinical Questions in the Emergency Department.” *Annals of Emergency Medicine* 75, no. 3 (2020): 408–415. doi:[10.1016/j.annemergmed.2019.07.003](https://doi.org/10.1016/j.annemergmed.2019.07.003)
5. Hoogland, Margaret A. “How Medical Students Discover and Use Medical Information Tools.” *Medical Reference Services Quarterly* 38, no. 4 (2019): 347–357. doi:[10.1080/02763869.2019.1661197](https://doi.org/10.1080/02763869.2019.1661197)
6. Krasne, S., C. D. Stevens, and L. Wilkerson. “Improving Medical Literature Sourcing by First-Year Medical Students in Problem-Based Learning: Outcomes of Early Interventions.” *Academic Medicine: Journal of the Association of American Medical Colleges* 89, no. 7 (2014): 1069–1074. doi:[10.1097/ACM.0000000000000288](https://doi.org/10.1097/ACM.0000000000000288)
7. Taulant, Muka, Marija Glisic, Jelena Milic, Sanne Verhoog, Julia Bohlius, Wichor Bramer, Rajiv Chowdhury, and Oscar H. Franco. “A 24-Step Guide on How to Design, Conduct, and Successfully Publish a Systematic Review and Meta-Analysis in Medical Research.” *European Journal of Epidemiology* 35, no. 1 (2020): 49–60. doi:[10.1007/s10654-019-00576-5](https://doi.org/10.1007/s10654-019-00576-5)
8. Foster, Margaret J., and Sarah T. Jewell. *Assembling the Pieces of a Systematic Review: A Guide for Librarians*. Rowman & Littlefield, 2017.