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Overdiagnosis: it's official

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Recently the US National Library of Medicine (NLM) unveiled new terms to be included in the medical subject headings (MeSH) vocabulary used to index, catalogue, and search journal articles, books, and other biomedical and health related information.¹

One of the new terms is overdiagnosis

“The labeling of a person with a disease or abnormal condition that would not have caused the person harm if left undiscovered, creating new diagnoses by medicalizing ordinary life experiences, or expanding existing diagnoses by lowering thresholds or widening criteria without evidence of improved outcomes. Individuals derive no clinical benefit from overdiagnosis, although they may experience physical, psychological, or financial harm.”²

Why is this a big deal

At the core of advancement in any scientific field, including the study of disease overdiagnosis, is the ability to build on the existing knowledge base. That demands tools to facilitate systematic assessment of that knowledge. The MeSH taxonomy was developed as a key tool to meet that need.

What is MeSH?

NLM created MeSH in the 1960s to describe what journal articles are about. MeSH indexing “is a form of intelligent preprocessing” of the literature that greatly facilitates searching.³ It improves search sensitivity by providing a consistent way to find conceptually similar content that might appear under many synonyms (for example, “myocardial infarction” (the MeSH term) vs “heart attack,” “MI,” “coronary infarction”).⁴ It improves search specificity by eliminating false positive results. For example, a full text search looking for articles about “overdiagnosis” would return an article explicitly not about overdiagnosis if the article included a sentence such as, “this article does not discuss overdiagnosis.”

There are about 27 000 MeSH subject headers, 83 subheaders (article descriptors such as “therapy,” “epidemiology”), publication types (for example, “controlled clinical trial,” editorial”), and supplementary concept records (for example, descriptions of chemical products). Typical published articles are assigned 10–15 MeSH terms. To keep up with changes in medicine and research, NLM adds new MeSH terms annually—227 were added in 2021.⁵

Requests for new subject headers can be submitted through the NLM website (<https://www.nlm.nih.gov/mesh/meshsugg.html>). One of us (SW) requested the overdiagnosis term about a year ago to make it easier to look at trends in articles on overdiagnosis over time. Without a MeSH term the searches looked for the word

“overdiagnosis” in the title or abstract of journal articles—but it was obvious that many relevant articles were missed, and many irrelevant ones included in results.

Further, when we looked at the NLM MeSH browser we noticed that the concept was not categorised properly, listed only under “medical overuse,” and not differentiated from overutilisation, misdiagnosis, overtreatment, unwanted care, diagnostic errors, inappropriate prescribing, and polypharmacy. Although overdiagnosis overlaps with many of these concepts, it is distinct. For example, overdiagnosis can cause overuse, but it is conceptually very different: a person with an overdiagnosed condition may not seek treatment but still experience lifelong problems from labelling, etc. On the other hand, toxic therapy may be overused in end-of-life care for late stage disease, and that is not a case of overdiagnosis.

The NLM staff agreed that since overdiagnosis is an important area of research with a rapidly expanding literature, a new (and properly defined) MeSH heading would be valuable and worked closely with us in drafting the definition.

Defining overdiagnosis is challenging. A Google search “what is overdiagnosis” (on 10 September 10, 2021) returned 679 000 hits. A cursory look shows that some definitions focus on overdiagnosis as a consequence of screening, primarily in cancer. Others also acknowledge a second stream—overdiagnosis stemming from expanded disease definitions. We included both strands in our definition. While many will have their own wording to refine the definition, whereas we believe it captures the broad concept and represents an important step forward in the area of overdiagnosis research and reporting.

The new NLM MeSH heading for overdiagnosis is welcome. It will improve indexing of journal articles and the accuracy of literature searches.

It is also symbolic. Overdiagnosis has been around as long as there has been diagnosis. But its recognition as a specific concept is a relatively new phenomenon.⁶ Interest in the subject has grown substantially over the past decade, in part fueled by the annual international Preventing Overdiagnosis conference.⁷ At the first such conference, held at Dartmouth College (Hanover, NH, USA) in 2013, “overdiagnosis” still seemed like a niche concept. The new MeSH heading makes “overdiagnosis” official, validating its place in scientific reporting and in the evaluation of the published literature.

Competing interests: none declared

This essay is dedicated to Lisa Schwartz, our beloved colleague, partner, friend, and inspiration in the area of overdiagnosis. She and SW first discussed the idea of the new MeSH term in 2013 after encountering problems trying to create a slide to show time trends in medical journal articles about overdiagnosis at the first Preventing Overdiagnosis meeting. This brought the recognition that others

must be experiencing the same challenges in summarising the literature in the field. SW also wishes to thank librarian extraordinaire SJ Golding, MLS, for helpful suggestions and encouragement, and Dan Cho, senior MeSH analyst at the National Library of Medicine for guidance and support.

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