Transcript

>>Let's get started. So again, welcome to MeSH changes and PubMed Searching. My name is Catherine Staley from the National Library of Medicine. I am here with the team of colleagues, including Kate Majewski from the NLM and Rebecca Brown from the Network of the NLM Training Office, who will be helping me answer your questions. Additionally, Michael Tahmasian and Brittney Davis from the NLM are here supporting us on the technical side. Today's class is about what happens when MeSH changes and how to adjust your PubMed searches for changes to MeSH and indexing overtime. We offer this class every year, so if you've attended before then this will be familiar. However, we try to use examples from recent MeSH updates to keep it fresh. OK. I'm going to turn off my video.

And we like to see if we're teaching what we think we're teaching. So we're going to start with a pretest and end with a post test. I will ask Michael to now launch the poll with our pre test questions. Thank you, Michael. It is also on the last page of your handout, so feel free to record your answers on the handout if that's convenient for you. And we will check our answers together at the end of class. So take a few moments to record your answers. Now in the poll or on your handout. And then we'll review those at the end of class. If you're just joining us, we did just put a link to a handout in the chat. If you would like to download that and follow along, please feel free to do so. And we're just taking our pre test, which will wrap up here in just a few seconds. It looks like we have most folks have completed it. Great. All right, so again, we will review our post test at the end of class and go over these answers to see how we did and what we've learned along the way. So Michael, if you'd like, we can go ahead and close the poll now. Great. Thank you. OK.

Here is our agenda for today. So we finished the pretest, so next we will talk about what happens when MeSH is updated and how you find out about those updates and we'll discuss different examples of MeSH changes from the PubMed searchers perspective and then we'll finish with our post test. And like I said, I'll stop to address questions throughout. So please put those in chat as we go. MeSH is updated every year. Terms may be added, changed, or deleted to reflect changes in the biomedical literature. The changes take place near year's end to start the new year off rate with some better language for search and retrieval. So today we'll review 3 common MeSH changes that can affect your PubMed searches. These include a new term with the same meaning. A new term that is more specific. And hierarchy changes. These don't encompass all of the different MeSH changes, but rather the ones that could impact your PubMed searches going forward. Changes to MeSH are documented in multiple places, including on the MeSH home page and in the NLM Technical Bulletin.

I'm now going to open PubMed to show you how to get to the MeSH home page, and we'll also briefly review the Technical Bulletin article together. If you'd like, you can follow along in PubMed in a second window to do our searches and exercises today. If you have only one screen another option then is to run the searches in PubMed and the MeSH database using another device like a phone or an iPad. Or you can just watch as I go and Rebecca is putting a

link to PubMed in the chat now. So when you're ready and you have your handouts and or PubMed ready to go, give me a thumbs up using the reactions icon and this will let me know that we're ready. Great seeing lots of thumbs. Wonderful. OK, I am now going to open up PubMed so we can all see it together.

OK, so first let me show you how to get to the MeSH pages from PubMed. So I'm going to scroll down until I see the Explore menu, and under that menu I'll select MeSH database. On that page, under more resources, I'll select NLM MeSH home page. So around October every year, the MeSH staff will post the changes for the next year here where it says 2023 MeSH files are now in production. And this is on your handout as question number one changes for the next year are generally posted in the month of October on the NLM MeSH website. Rebecca is going to post a direct link to this 2023 MeSH files are now in production page in the chat box and I'm going to go to that page now. On this page are links to MeSH changes documentation offered in a variety of formats at the very top you'll see a new feature this year, which is a list of terms that are under consideration for inclusion and MeSH 2024. If you would like to learn more about this new feature and other updates about the MeSH process, you can watch the recording of the NLM's special listening session about MeSH that was held on January 18th. When that recording is available, it will be posted to the Technical Bulletin and on this Learn about MeSH page.

But let's focus on the 2023 updates. Beginning with the release of 2023 MeSH, NLM offers 9 reports that detail the changes that happened during MeSH year end processing. Or Yep. And you can view these reports by clicking on the MeSH Yep Report link on this page. We also announced these changes in the NLM Technical Bulletin in November and December. And this is on your handout as question #2 documentation and guidance on MeSH changes in MEDLINE can be found in the NLM Technical Bulletin. Rebecca is going to share a link to this year's Technical Bulletin article in the chat box, and I will go there directly. Thank you, Rebecca. So here is our Technical Bulletin article. If you do not already receive the Technical Bulletin announcements via e-mail or RSS, being alerted to the MeSH updates is a good reason to sign up. This year we completed processing on December 15th and updated MEDLINE to reflect changes to MeSH. This MEDLINE and MeSH Data Changes article published every year, walks you through changes to the database that might affect your searching. We've also hosted for the last seven years a webinar highlighting important changes to MeSH. This year's was on January 10th. That recording is now available from the Technical Bulletin or on the Learn about MeSH page. So that is where you can find information about MeSH changes.

Next, I'm going to quickly review some PubMed basics. So let's start by looking at an example of a saved search in PubMed. I'll go back to PubMed. I'm going to go to my MyNCBI accounts to look at my saved searches and if you have a saved search, feel free to follow along in your own account and explore one on your own. So here is an example of a typical saved search. To review it, I'm going to click on it to run it in PubMed. And here I have my results. So if you've attended PubMed training before, you know that there are two things that I need to check to

understand what PubMed is doing with my search. Can anyone tell me in the chat the two things that I should check to understand what PubMed is searching? Let me know what you think in the chat. Yes, lots of folks saying go to the advanced page and look at those search details. Good. And specifically I want to look at those search details so I can see my MeSH term mapping and then I also want to check my automatic explosions. And this is #3 on your handout.

You want to check your saved PubMed searches for MeSH term mapping and automatic explosions. So first I'll look at my search details by going to the advanced search page. And I'm going to scroll down and open up the search details for my search. So all of my biomedical terms should be mapping to MeSH. If I have any that are not mapping, I need to find better terms for my best PubMed results. So here I have mapping for both of my biomedical concepts. The search term long COVID maps to the MeSH term post-acute COVID-19 syndrome. And migraine maps to the MeSH term migraine disorders. It is possible that these maps may change from year to year with changes to MeSH. So if knowing about those changes is important to you, you should consider documenting this term mapping as shown on this screen. You can copy and paste it or you can use the download feature. Second, I want to check my explosions. I will use the MeSH database to determine what narrower terms are automatically being searched through this mapping. So I'll have you try this first and then we'll review the steps together. So please open the MeSH database. You can use the MeSH link from the bottom of any PubMed page to get to it.

And once you're there, tell me in the chat how many additional terms are added when my search maps to migraine disorders. And this is also question #4 on your handout. If you want to look at it there. So how many additional MeSH terms are added when my search maps to migraine disorders? I'll give everyone a second to look at that. OK, I'm getting lots of fours in the chat. Seems to be the consensus. So let's review how to find this together. So I'll go to the MeSH database. And I'll search for migraine disorders. And here is our MeSH record. If I scroll to the bottom of the screen I see the hierarchy at the bottom of the MeSH database record. I'm going to make that a little bigger for us to look at together. And here are the narrower terms that are automatically included in my search, and this tree may change over time, but right now there are four narrower terms under migraine disorders. So your answer to question #4 on the handout, how many additional MeSH terms are added when my search maps to migraine disorders is 4. Again, if this is important to you for any particular search, then consider documenting your explosions as well. If you do regularly check your explosions and MeSH, give me a thumbs up with that reaction icon. Yeah, lots of thumbs. So if you're only looking for a few good articles, checking explosions might be unnecessary. But if you're doing systematic reviews, you should check your explosions for each term and every year so you know exactly what you're searching.

OK. Let's take a moment to explore something else about migraine disorders. I'm going to go back up to the top of the MeSH record and make my screen a little bigger. There we go. So this

is one of the most common questions that we get about MeSH. Why are there two dates for year introduced? Year introduced is included in a MeSH record when the term was added sometime after the debut of MEDLINE in 1963. If you do not see a year introduced, you can use the term for searching the entire database of indexed PubMed records. If you do see a year introduced, you should consider how to search records that were indexed prior to that year and we're going to talk about that a lot today. On this record under year introduced, you see 2006 with 1963 in parentheses. When two dates are listed for year introduced, you can use the term to search the concept back to the oldest date listed. And this is on your handout as question #5. When two dates are listed for year introduced, you can use the term to search the concept back to the oldest state listed. So this means that you can use the term migraine disorders to search for this concept back through 1963. This concept has been in MeSH since 1963, but the preferred term became migraine disorders in 2006. There are various reasons that this might happen. Maybe MeSH staff decided that there was a better name for a concept, and we'll talk about that in a minute. Maybe it was a supplementary concept record for a while. But the important thing is that you can use this term for searching back to the oldest date listed here. To review MeSH dates, we've created a video that you can refer back to and Rebecca is putting a link to that in the chat now.

OK, so it's time for a little quiz to review this and you will need the mesh database to find the answer. And this is quiz number one on your handout. So my question is how far back can you search with the MeSH term post-acute COVID-19 syndrome? So again, you'll want to use the MeSH database. To figure this out, and when you've got it, put your answer in the chat. OK, lots of folks in the chat saying 2020 or C. Our corresponding letter on the screen. Yeah, let's go to MeSH together and check this out. So our answer is 2020. So I will open up MeSH so we can review this together. So I'm in MeSH. And I'm going to search for Post-acute COVID-19 syndrome. So you can search this concept using this term post-acute COVID-19 syndrome back to the earliest date listed under year introduced, which is 2020. The latest date, 2023 tells you that something else changed in the record that year. Probably the preferred term.

OK, let's do one more quiz about this. So that we really understand it. This time, tell me how far back can you search with the MeSH term plastic surgery procedures? And this is also quiz #2 on your handout if you're following along there. OK, this time I'm seeing a lot of 1998. Answer B on our slide. That is correct, 1998. So let's go to MeSH and review this as well. I'll open MeSH back up. And this time I'll search for plastic surgery procedures. Here's our MeSH record and I can see here that I can search this concept using the term plastic surgery procedures back to 1998. Wonderful. OK. This is a good time to pause and see if I can answer any questions that have come in. Kate, have we had any questions?

>>One just popped in the chat. OK, so Sue asks, is this a full true or false statement "when a new, more specific MeSH heading is added to the vocabulary it is applied to records that were indexed in previous years." Isn't the answer sometimes?

>>So I can take that, Kate. Thank you. So we are actually going to review that in just a couple minutes when we start talking about some of the specific MeSH changes and I believe that's number one on our post test. So we'll cover it then too. So if it's OK, I think I'll wait till we get to that point and we'll review that together and do some demonstrations together and answer that. But if it's not clear by the time we're done, we can absolutely review it again. Are there any other questions?

>>I don't see any other questions yet.

>>OK. Great. Thank you. All right, we'll keep putting your questions and comments in the chat and I will stop again to answer those in a couple minutes. OK, so now let's talk about some categories of MeSH changes from the context of a PubMed searcher. The first type of change is when a term is updated, but carries the same or similar meaning of an existing concept. So in other words, the concept still appears in the literature, but different terms are now being used to describe it. So let's look at an example of this. I'm going to open up the MeSH database and search for homeless persons. So I'll open up MeSH. And I'm going to search for homeless persons. With this search, we are directed to the term ill-housed persons, which is a new term for this year. However, notice that it has two dates beside year introduced. This concept has been in MeSH since 1996, but the term was updated in 2023 from homeless persons to ill-housed persons. Therefore, this is the renaming of one term to another that represents the same or similar concept. So this type of change is because MeSH or another terminology body decides that there is a better term for something. Maybe it's a little more precise, or it's more widely accepted, or it reflects the way that our language has evolved.

So let's use the PubMed search builder to search for this term. I do want to note here before we search that I'm not recommending any particular search strategies. In my examples today, I'm not demonstrating real research questions. I haven't done a reference interview. I am using examples to illustrate what kind of retrieval is included when you use for map to MeSH in your searches. So just something to keep in mind as we go. Alright, so now I will click search PubMed. And notice our results by year graph on the results page. We have this term applied to records back to 1946, so the specific term may have changed this year, but when there's a one to one relationship between the new term and the old term, the NLM does a find and replace in the database for the old term and you can use the new term for searching right away. So now I will try searching for the old term in PubMed. So I'm going to go up to my search and search for the old term homeless persons and I will tag it with MeSH. And click search. And now I'll check my search details on the advanced search page. And here's my search and when I open up those details you can see here that the old term mapped to the new term. And this is because the old term is an entry term for the new term. So your old search should work just fine. You might consider switching to the new term, but an adjustment isn't usually necessary. There is a list of MeSH preferred term changes like this one for 2023 on the what's new in MeSH page that we looked at earlier. So that is the first type of MeSH change. A simple replacement of one synonymous term for another. And to summarize, when MeSH renames a concept, the existing

PubMed Records are changed and the old term is added as an entry term, so you usually need to do nothing. You could consider adding the new term to your searches.

And this is on your handout as question #6. When MeSH decides to rename a concept, usually you need to do nothing. So let's review this with a quiz. And this is #3 on your handout. So tell me in the chat which MeSH term does a search for Alien Hand Syndrome map to? So when you find it, let me know in the chat. We're getting a lot of responses for B) Alien Limb Phenomenon. I'll give folks a minute to see what they're finding in MeSH. OK, yes, this time the answer is alien limb phenomenon. This term replaced alien hand syndrome this year, so let's go to PubMed and review. How we know this? I'm going to start with a fresh search in PubMed. And I'll search for alien hand syndrome. And then I'm going to go to my search details. I can see here that alien hand syndrome is mapped to the MeSH term alien limb phenomenon and it maps because alien hand syndrome became an entry term for alien limb phenomenon.

OK. The second type of change is when a new term is added to gain specificity, and this is the most common type of change to MeSH. So for example, this year we added multiple new terms about bone fractures like elbow fractures, fibula fractures, knee fractures, wrist fractures and more. And we also added some specific healthcare professions like gynecologist, obstetrician, paramedic and combat medic. And as in most recent years, we added more COVID-19 specific terms such as post-acute COVID-19 syndrome, COVID-19 serotherapy and COVID-19 drug therapy. We also added an updated terms related to populations and the social determinants of health. So let's go to MeSH and search for a new term that was added this year limbal stem cells.

I'm going to open up MeSH and search for limbal stem cells. And here's our MeSH record. So limbal stem cells is a new term this year, if you are looking for relevant literature, it can only be used to search indexed records from 2023 forward. So let's try this search and see what we get, so I'll add it to my search builder and search in PubMed. So as you can see, there's not many results here yet, and a quick look at the results by year graph shows us the limitation of the search. So how do we include literature about this topic that was indexed before 2023 in our search? Let's go back to the MeSH database and look for some clues. So in this case, if I scroll down. A hint is provided under the previous indexing. Previous indexing will tell us which term or terms, either individually or in coordination, were used to index this concept prior to the addition of the new term, and depending on your topic, you'll want to consider which combination of previous indexing terms make sense to search with. Limbal stem cells only has one. Previous indexing term limbus, cornea eye and it can be used to search for literature on this topic indexed between 1992 and 2022. So to search comprehensively back to 1992, I would want to search using the new MeSH term without any date restrictions. And then I would want to think about how to search using the previous indexing terms for records indexed prior to that date. So for this example, I may search the search string. And I'll make the screen a little bigger so we can all see that better. There we go. So remember that I told you that the date index is distinct from the publication date. This is the indexing date and it is searchable using

the search tag MHDA. So here in this search string I'm searching for all records that were indexed between 1992 and 2022 that includes the MeSH term limbus cornea.

OK, let's look at another example of this. My screen a little smaller. Here we go. OK, this time I'm going to go to MeSH and search for motorized mobility scooter. So motorized mobility scooter. Note that the year introduced for this term is 2023, so I'm going to run a search for it in PubMed. And I don't get any results, which means that no articles have been indexed using this new term yet. So to find earlier literature on this concept that was indexed before 2023, I need to review the MeSH record. So I'm going to go back to MeSH. And I'll check to see if there's any previous indexing. I don't see any previous indexing. Which is typical for these newer, narrower terms. So tell me in the chat if you know what should I do next if I don't see any previous indexing, but I want to search for articles that were indexed before this year. Where should I look next? Yes, I am seeing lots of folks tell me broader terms or in this case, wheelchairs because it is the broader term. Exactly.

So if we see no previous indexing, we simply check the next broader term or terms in the hierarchy. Because if no single specific term exists in MeSH for a concept, MEDLINE indexing uses the closest more general concept that's available. So as many of you pointed out, I see that wheelchairs is the broader term, so I'm going to click on it. To view it in MeSH. I can use wheelchairs to search back to 1976. So let's add this term to the search builder and see what we can find. So we found zero results with the new term, but we see over 5300 with this broader term. OK, so to review, this is the second type of MeSH change, a new term that adds specificity. So how do you adjust your searches for this kind of change? For this type of term, existing records are not changed. You may want to use the new, more specific term for your searches of new records. So think about what you want to retrieve and for what dates and if you want records indexed earlier, consider your options using the broader term and or previous indexing information to search earlier years. Consider what combination of terms might be appropriate. Using the dates on the mesh records to determine what years of indexing to search each term with the MHD a search tag. And because this is important information, it's also #7 on your handout. When a new term is more specific use the new term for newly indexed records. Use previous indexing and or the broader term with the MHDA search tag to search previously indexed records.

So let's do an exercise so that we can walk through this together and you can follow along with exercise number one on your handout. So first tell me how far back can I search with the knee fractures? When you found it, tell me what you think in the chat. How far back can I search with the mesh term knee fractures? And I'll give everyone a minute to look at that. I see lots of answers coming into chat. All right, looks like most of us think 2023 and that is correct. Because the term knee fractures was introduced this year, 2023. All right. Our next question, so where do I look in the MeSH record for terms that were used prior to 2023? So if I want to search knee fractures prior to 2023, where do I look in the MeSH record to find those terms? Yes, lots of folks telling us previous indexing. And that's correct. We want to look at previous indexing. So

as some of you pointed out, in this case there are two previous indexing terms. Knee injuries was used from 1963 to 2022. And fractures, bone was used from 2006 to 2022. So let's actually pause for a moment to consider these previous indexing terms. Knee injuries indicates where the injury is fractures, bone indicates the type of injury. So in this case we probably want to use both terms when we're searching for previous literature on the topic of knee fractures. But remember that the terms that you choose will always depend on what exactly you're looking for. OK. And our last question in this exercise, what field tag do I use to limit to records indexed between 2006 and 2022? So what is the tag that I can use to limit to years indexed. Yes, lots of people saying MHDA. That is correct. It's the MHDA tag. And you can see here on the screen an example of what that search might look like using that tag and limiting to records index between 2006 and 2022.

So Kate, I'm actually going to pause here for questions because I think that we've had more come in. So is there anything that I can address or clarify at this point?

>>Yes, indeed, there are lots of questions. However, I do think that you've answered many of them in your continuing presentation, but maybe it would be good to just review a couple of things to be sure that folks understand. So there is some confusion about the difference between the indexing date and the publication date. Would you like to address that?

>>Yes, I can address that. So we're talking about the indexing date. Which is when the publication was indexed using MeSH, which is different than when it was published. So we in 2023, we may receive articles that were published in a previous year, but we're not indexing them until 2023. And when we do that, we're going to use the most recent MeSH, 2023 MeSH. And so that's a different than the publication year. So that's when we do a search and we see that a term was introduced in 2023, but there are articles from 2021-2022 that are tagged with that MeSH term. It's because they weren't indexed until 2023. So when we're talking about year introduced, we're talking about the year that it was indexed, that was starting to be used for indexing. So, and Kate, if you have anything to add to that, please feel free. Hopefully that covered it. If anybody has any additional questions, please put them in chat.

>>There's a related question. One person's asking. You know why bother with this date limit? Can't we just include both of the terms, the new, more specific term plus the broader term that was used previously?

>>Oh, that's a great question, Kate. Do you mind taking a stab at that one. Thank you.

>>Absolutely could use both terms, but the benefit of using a more specific term is you gain more specificity in your results. So in the example here that we're looking at for records that are indexed from 2022 and beyond, searching for the more specific term of knee fractures is going to get you better results than searching the broader terms that were used previously. So yeah, it's up to you. How you would like to search and you know, you're welcome to do the broader search, but now that we have a more specific term, I think you know you'll benefit from the added specificity. All right.

OK, here's a question. If you search with MeSH back to the date in parentheses, is the MeSH term exploded all the way back to that date? What if a MeSH term was a supplemental concept first? I guess I'll respond to that too. So one of the reasons why at the very beginning of class, Catherine pointed out how to find the MeSH explosions and how to document them is that indeed the explosions will change over time. So if you are doing, for example a systematic review, you do want to be documenting that because there will be changes. So this example that I'm sorry, I'm not seeing the name of the person that asked this question, I apologize, but yeah, the example of having a supplemental concept that then became a MeSH preferred term leader is an example where there may not be narrower terms associated with it, so your search is going to be broader for the earlier years. So again, yeah, you will need to check and document how the MeSH hierarchy changed over time. All right.

And there was a similar question with just a specific example of migraine disorders. Yeah, we would have to look through time at the MeSH changes to see what narrower terms were included. There are four narrower terms this year. There may have been fewer in previous years. So those are the types of things you would want to document if you're doing systematic reviews. OK.

Oh, and there were a couple of questions about the term black people, which is was introduced in 2023, and the question is why the year introduced is 2023 and doesn't reflect the concept of being in MeSH for previous years. So I wish I had a more specific answer for this question, but if my memory serves, we had two terms previous to 2023, we had African continental ancestry group which was used from 2004 to 2021. And then we also had African Americans, I believe, which would be a more specific term. And then in 2022, we had the term blacks, so I think searching historically with those terms may require looking over time at the indexing, and I don't have a very good answer for how like that --what that specific search would be. So I'm going to have to get back to you on that. I apologize.

OK. And I think the last question was whether the MeSH browser is going to continue to be available. I'm not aware of any plans for changes to the MeSH browser, so OK. I think that was it for the questions up to your break and I'm going to look for the additional questions as you move on.

>>Wonderful. Thank you, Kate. And I see Rebecca was answering some questions in the chat as well as we were going so. All right. So we will continue on.

So a different category of MeSH changes that may affect your results or hierarchy changes. Hierarchy changes can result in dramatic retrieval changes to your PubMed search, and in fact, if you ever experience dramatic retrieval changes in PubMed, it's almost surely one of two things: either mapping changes or hierarchy changes. And this is one type of change that many searchers discover by accident when they're saved searches regularly start retrieving far more or far fewer results after the annual change to MeSH. So today I'll highlight two hierarchy changes that may affect your searches. The first is a change related to bacteria in the gut, and

this change involved both restructuring of the hierarchy and preferred term changes. So on the screen we see the term Lactobacillacae in the hierarchy as it appeared before 2023, and I specifically want to draw your attention to its narrower term, Lactobacillus which has 17 narrower terms of its own. Now we're looking at Lactobacillacae in the hierarchy after the 2023 changes took effect. You can see that some of the terms have been renamed and moved out from under Lactobacillus. So for example Lactobacillus salivarius became Ligilactobacillus salivarius. And it is no longer a narrower term of Lactobacillus. So let's consider how this hierarchy change could affect your search with an exercise. So I have both the hierarchy for MeSH 2022 and MeSH 2023 on the screen now, and this is also included as exercise #2 on your handout. If you want to follow along there. So my question is, if you had a saved search for Lactobacillus previous to 2023 and you wanted to continue to retrieve the same scope of literature, would you change your safe search? And if you would, how would you change your search? And I have an arrow on the screen pointing to Lactobacillus in both years to help orient you. And I'll repeat that question. So if you had a saved search for Lactobacillus previous to 2023 and you wanted to continue to retrieve the same scope of literature, would you change your saved search? And if you would, how would you change it? So I'll give you a minute to think about that and you can put an answer in the chat. Seeing some good answers trickling in here to chat, and I'll give everyone another minute to consider this. OK, so the answer is that you would probably want to change your search to Lactobacillacae because a number of species were moved out either to a higher level in the hierarchy or to under the broader term Lactobacillacae.

Let's look at a second example of this. This one is related to aneurysm. So here we see the term aneurysm, dissecting in the hierarchy with three narrower terms and this is what it looked like in 2022. In 2023, the term aneurysm, dissecting was changed to aortic dissection, and then it was moved down one level. You can see here that a new term dissection, blood vessel was added as a broader term for aortic dissection. And the term Loeys–Dietz syndrome was removed entirely from this part of the tree, but it does remain in other parts of MeSH. So I have a similar question for you, and this is exercise #3 on your handout. Does a saved search for aneurysm, dissecting need to be changed? And I have an arrow on the screen to remind you that in 2023 aneurysm, dissecting was changed to the term aortic dissection. So let me know what you think in the chat if I would need to change a saved search for aneurysm, dissecting. So I'll give us all a minute to think about it. Seeing lots of yeses. So in this case aneurysm, dissecting is going to map to aortic dissection. So if you want to keep including the term carotid artery, internal, dissection, and the term vertebral artery, dissection, then you should consider going up one level to dissection blood vessel. So like most of you said, yes, we would want to consider changing our search to keep that same scope of literature.

OK, so how do you adjust your searches for this kind of change? So for the most part, hierarchy changes offer an improvement to your explosions, and this is on your handout as question #8 hierarchy changes can result in dramatic retrieval changes, and they generally offer an improvement to your explosions. So consider the new arrangement and decide how specific

you want to be. A hierarchy change often comes with new terms that might be useful to add to your search. OK. Let's do another exercise to review some of the concepts that we've covered, and this is exercise #4 on your handout. Let's say that you want to search PubMed as comprehensively as possible back to 2010 for literature related to paramedicine. How would you do this? We're going to review these steps together, so I'm going to start in MeSH. I'll open up MeSH. And I'll search for paramedicine. The current MeSH term for this concept is paramedicine, so I can search this year so far with that term. Now let's check if there's a previous indexing note, so I'll scroll down. And I see that there is. Emergency Medical Services was used from 2005 to 2022. So how would you restrict your search for a range of indexing dates? And remember, we only want publications indexed in 2010 or later. So this is what our search string could look like. And I will make-- Oh, that's the wrong search string. We're already passed that one. Let me grab the right one here. There we go. Paramedicine. There we go. Let me make this bigger. So in this case with this search string, I'm searching for the new term paramedicine. And then I'm searching for the previous indexing term, Emergency Medical Services limited to the years index of 2010 to 2022 using the MHDA tag.

OK, let's try one more exercise like this. Very similar question, this time you want to search PubMed as comprehensively as possible back to 2015 for literature related to dust mite allergy. So how would you do this? And we'll do this one together too. So I will open up MeSH. And I will search for dust mite allergy. Here it is in MeSH I see that this term was introduced this year. Let's see if we have any previous indexing. I scroll down. And I see that we do. We have three terms. Dust was used from 1967 to 2022. Hypersensitivity was used from 1967 to 2022, and mites was used from 1970 to 2022. So how would I restrict my search for a range of indexing dates? And remember that we're only going back to 2015. So let's review this together. I'll go up to my search builder. First, I'm going to add my current term. And then I'll add each previous indexing term and limit to which years I want to search using the MHDA tag. And I will copy and paste that. And put it into our search builder. Ohh make this bigger for us to see. Here we go. So when combined this is what my search can look like. The moral of this story is to consider your concepts. Explore the MeSH vocabulary and explore indexed records to get a better sense of how these terms are being applied. OK. Before we do our post test, what other questions can we answer?

>>OK, there are a few questions. So Rebecca answered this one in chat, but I'd like to verbalize it for anybody who missed it since chats very busy. Is there another-- a tool or another source to go back to look at how MeSH existed for a prior year and there is-- and a couple of-- I think I mentioned before, at the end of the last break that there is a MeSH browser. And in the MeSH browser you can look at the hierarchies for the previous year. The MeSH browser also may contain some additional history notes, so if you do have questions, I see there's other questions about specific terms in the chat. Sometimes you can go to the MeSH browser and see more historical notes in the browser. OK. I think the next question was about taxonomy. We talked about bacteria today, those lovely lactobacilli. Does MeSH biological taxonomy follow NCBI taxonomy? And that is the intention moving forward, we're trying to harmonize the MeSH

taxonomy with NCBI taxonomy. I actually don't know how far we have gotten in that process, so that's a question for the MeSH staff. Unfortunately, we do not have MeSH staff attending today, but that is the intention. OK. All right. Just a moment. Let me look through and see what I might have missed. OK, so the question why do some change terms have two dates and others have one and others have none? Would you like to entertain that one, Catherine?

>>Sure, I can answer that. So to start, if a term does not have any dates, that means that that term has been in MeSH since it's the beginning of MeSH in 1963. If you see one date, then that means that was the year that it was introduced. So if it says 2023, then that's the year that it was introduced. And if you see two dates then you can use that term to search for records indexed back to the oldest date which is in parentheses, and then the other year typically means that something else changed in that record that year. So it's probably the preferred term change or maybe it was a supplementary concept record, but those are the three, you know no date, one date, two dates, and maybe Rebecca can put the link to the video about two dates and MeSH in the chat again when she gets a second. I know she's answering lots of questions in the chat too, but that video is very helpful as well.

>>OK. And Kim asks, I'll take this one to give Catherine a break. If there are multiple previous index terms with overlapping years, are they always combined with AND? And Kim, no, it's you really do need to take a look at those previous indexing suggestions. And think about what you want to retrieve, because there may be a combination of terms too that were used for indexing to describe the one concept that exists for it now and we had an example of that where you're combining of the fracture example where you're combining the anatomical term with fracture. So you want to include both and therefore you would use and, but it's not always the case. I have definitely seen examples of MeSH terms where the previous indexing. might be -- they might have listed two or three terms, but depending on what you actually want to search, you may choose from those terms rather than including them all. So you really just -- you want to think about what you want to search and look at those previous indexing suggestions as just that as suggestions. And decide for yourself whether you're going to be using and or combination.

OK. And yeah, there's more requests to look at. The 2023 changes to black people and African American and again my understanding of the specific decisions related to MeSH may be limited and you may want to write to the MeSH staff to ask about that. But what we're talking about today is really the general principles you would use. And so what I would assume based on the indexing date-- or excuse me the date introduced and the lack of previous indexing means that you would need to investigate what the previous indexing terms were and there isn't a one-to-one relationship between the new term and the old term, and that's why it's a little complicated and very clear guidance may not have been available in the MeSH database. So that's usually what happens if there's not like a very clear way to describe how you would want to search a specific term, they may not include previous indexing in all cases. So that's the best explanation I have right now. And again, if you have specific questions about specific MeSH

terms, those should really go to the customer service desk and ask MeSH staff directly. Alright, I see lots of stuff going on in chat, but I'm not caught up so I'll just mute myself for a moment while I catch up. Be right back.

>>Thanks, Kate. We can actually move to the post test and then we can answer more questions after that, while you get caught up and if folks have additional questions, feel free to put those in the chat, but we can get started on our post test. So to wrap up, we'll take our post test and review the answers. Michael has launched that poll for us. Thank you, Michael. And again, you can also review these on your handout. So these are the same questions as the pretest. Just giving you a chance to check your new understanding, clarified understanding, and then we'll go through these answers together in a moment. OK. Let's go ahead and review our answers. So Michael, if you want to end the poll, great. Thank you.

And I actually have the answers prepared on a slide, so that it's very easy to see what the right answers are. So I have that up on my slides now. So we will walk through these together. So our first question, when a new, more specific MeSH heading is added to the vocabulary, it is applied to records that were indexed in previous years, true or false. And this is generally false. This would require a reindexing of records, so you'll need to use the broader term or the previous indexing information to search for records that were indexed prior to when the term was available in MeSH. There are some very rare exceptions to this. OK, #2. When a MeSH term is replaced the term that was replaced is retained in MeSH as an entry term. Replaced terms are almost never truly deleted from MeSH. They are retained as entry terms to the relevant current term. And our third question, the PubMed search results for a new, more specific term like systemic racism will be included in the results for the broader term above it, like racism. True or false? And this one is true. Searching or mapping to a broader MeSH term in PubMed will automatically explode to include all narrower terms below it in MeSH. And I noticed some chat. We have a couple questions related to this. If you see a term is in multiple places in the hierarchy which it can be and it has different, narrower terms depending on where it is in the hierarchy. All of those narrower terms will be included in your search. So it doesn't matter where it is in the hierarchy. If it has a narrower term and it's in the hierarchy of multiple places, all of its narrower terms will be included in your search. So I hope that helps to clear up a couple of those questions that I noticed in chat about narrower terms. OK. And our fourth question here, if my saved search suddenly retrieves many more or many fewer citations on a regular basis starting at the end of a calendar year, what is the most likely explanation? It's hierarchy changes. Hierarchy changes are the most likely reason for a dramatic change in search results, and you might also look for mapping changes. So, for example, if your search term wasn't in MeSH before, but now it's an entry term to a MeSH concept, that would also dramatically alter your search. OK, so before we do our final list of takeaways, Kate, are there any more questions that we can answer? We do have some time left here.

>>There is. There was one question about just technically, how do you get the previous indexing terms to your search box?

>>Oh yes, so you'll have to type them in manually. I've been copying and pasting from a different document just to simplify training so that you all don't have to watch me type everything out, but you'll want to look in the record, see what your previous indexing terms are, consider which ones you want to use, think about the years the indexing years that you may want to limit to, and then type those into the PubMed search builder or the PubMed advanced search wherever you would like to start your search from. Thanks.

>>So I think we've answered the questions from chat. If I missed your question, could you please re-include it in chat and repeat it so because if I missed it, I apologize. Ohh here's a new one, just popped in. Do you have to include MHDA for previous indexing? I'll just address that again, it's not a necessity to limit your search to specific dates when you are searching. However, if you want a more precise search, that's when we're suggesting using those indexing dates to search what are usually broader terms for previous years. Oh, and I guess I did miss one. Sorry. OK, so ill-housed persons pulls up articles that were published and or appear to be indexed prior to 1996. AF, I don't have a good answer for you. If they were indexed before 1996 I will investigate that, but I'm not sure why It would be pulling up records indexed prior to the indexing date for the MeSH field, so let me investigate. Maybe we've got a minute or two. I'll take a look. Thank you.

>>Thanks Kate. OK. We will finish up here. So here are our main takeaways from today to adjust to changes in MeSH. Check your MeSH mappings and your PubMed search details. Check the automatic explosions in MeSH. Use the year introduced, previous indexing guidance, and or broader terms with the MHDA tag to craft searches for older records. And read about the MeSH changes in October and the year end changes to MEDLINE in December, in the NLM Technical Bulletin. Thank you everyone for joining us today. Please don't forget to complete our class evaluation, which will pop up when you close this browser. And Rebecca is also putting a link to that in the chat. If you would like to claim MLA CE complete that evaluation to the end and you'll receive instructions on getting that CE. So thank you again for joining us. We'll stick around for a minute while Kate's doing some research on that question. If you have other questions, feel free to put them in chat. We can answer those. And thank you for attending and filling out that evaluation form even if you don't need the CE credit. We really appreciate your feedback on that form.

>>So I don't have a great answer about ill-housed persons and indexing prior to that-- Or previous indexing date. But I do see that we were able to map some previously indexed records that had been indexed. I believe with homeless people or the previous term that was synonymous, so it could be that we need to correct that previous indexing data on that term. You can't swear to it. I'm not a MeSH expert, but that is what it appears, so I will investigate. So thank you for pointing that out.

>>Hey, Kate. I think audio was out briefly and because I just-- if you would start what you just said again, say what you just said again.

>>Oh, sure. Yeah. So when I looked at the term ill-housed persons and indexing index records between. I just looked at 1990 to 1996. And what apparently happened is we were able to map a previous term that described homeless people to the newer term, so it's possible that we need to update the previous indexing date-- Excuse me, the date introduced. I'm sorry. The date introduced for ill-housed persons. So I'm going to bring that up with the MeSH staff and I thank you for bringing it up. Great. Thank you. OK. With that, I think we will close this webinar out. Thank you so much for attending. And you will receive notice when the recording is available. Thank you.