Transcript

SHARON: Hello everyone. Welcome to the Cataloging with MeSH class. My name is Sharon Willis, the Senior Cataloging Specialist in the Metadata Management Program (MMP), which is part of the Discovery branch and the User Services and Collection division (USCD) at the National Library of Medicine. I am joined by my colleague Kate Majewski, Librarian from our Engagement Program, who will assist with the exercises and monitoring the chat. Today we will be using a handout. Kate is putting the link in the chat. The handout is optional but may help you follow along and it's a good place for you to jot your answers to our exercises.

Here's our agenda for today. For the first 50 minutes or so, we will cover Introduction to Medical Subject Headings (MeSH) terminology and the MeSH Browser tool. We will pause briefly at the end of that segment for questions and answers. Then for the remaining 30 minutes, we will go over some principles of cataloging with MeSH. We will conclude with a question-and-answer period for the remaining time. So why should we use MeSH? A question that is often raised, "Why bother with controlled vocabularies when keyword searching is so widely available and so powerful?" In this "Google Age," keyword searching is very popular and effective in certain ways, but there are limitations. Note also that keywords cannot provide effective access across languages. For example, the keyword heart would not provide access to works on the heart and other languages, for instance Spanish (corazón) and Swahili (moyo), etcetera. Keyword searching is enhanced by the assignment of controlled vocabulary. Now, here's an example of a title in the NLM collection for which keyword searching would be problematic. The work is entitled Foo-foo Dust. What is the work about? Is it about dust? Is it about allergens? No. Foo-foo dust is a street term for crack. Foo-foo dust is a video that explores the relationship between a crack addicted sex worker and her 23-year-old drug addicted son. Another example. Now this slide shows a Roman god of speed and commerce, a Ford vehicle, a planet, a substance and a thermometer, and a rock singer from the 1970s. So what's the common term for all of these? Use chat to take a guess.

KATE: We've got several folks in the chat saying mercury.

SHARON: Excellent. Mercury it is. Here's another example. Now this example shows a greenhouse and an infant's room. What do we call these? Again, please respond and chat.

KATE: We had a few folks saying nursery or nurseries.

SHARON: Excellent. Again, nursery it is. A controlled vocabulary is beneficial because it identifies a preferred way of expressing a concept. It provides cross-references or variants that lead to the preferred term. It identifies the term's relationship to broader, narrower and related terms. Now here are some examples of controlled vocabularies, the Library of Congress Subject Headings (LCSH), Sears List of Subject Headings, the Art and Architecture Thesaurus (AAT), and of course Medical Subject Headings (MeSH). Note that NLM does not use LCSH or any of the other two vocabularies for modern materials.

The Medical Subject Headings (MeSH) thesaurus is a controlled and hierarchically organized vocabulary produced by the National Library of Medicine. Staff members of the NLM's

Controlled Vocabulary Services Program are responsible for establishing and updating the MeSH vocabulary. MeSH is used for cataloging, indexing, and searching of biomedical and health related information. Mesh includes the subject headings appearing in the NLM Catalog, MEDLINE, PubMed, and other NLM databases. MeSH data is available in a variety of formats for both searching and downloading. Catalogers search MeSH records online via the MeSH Browser.

There are three types of MeSH records: Descriptors, or main headings, which characterize the subject matter or content; Qualifiers, or subheadings, they're used with Descriptors and afford a means of grouping together those works concerned with a particular aspect of a subject; and Supplementary Concept Records (SCRs) are used for certain chemicals, drugs, and other concepts such as rare diseases. They are not used for cataloging at NLM.

Descriptors are revised annually to reflect changes in the biomedical literature. Descriptor records are further divided into 3 subtypes: Topical, which indicates the subject or topic of the work, that is, what the work is about; Publication Characteristics or Publication Types, these descriptors indicate what the work is, that is to say, its genre or format rather than what it is about; and Geographicals, or place names, are descriptors indicating continents, regions, countries, states, and other geographic subdivisions.

The descriptors are organized in a “tree,” with 16 main branches or trees. Now each tree is assigned a letter as an identifier, and each descriptor is located in one or more trees. The tree structure goes from more general terms to more specific terms. Each branch has many levels of subbranches and each heading has a position in the hierarchy. For example, the descriptor Back appears once in this hierarchy. You can see that as part of the torso which is a body region in the anatomy tree. Back itself has two regions as subbranches. The subdescriptors may appear in more than one tree. For example, the descriptor ear appears in more than one tree. It is a part of the head as well as a sense organ, with subbranches in that tree. The majority of MeSH trees encompass topical descriptors. All the topical descriptors are found in trees A through N. Publication characteristics or publication types are exclusively in the V tree. Geographicals are exclusively in the Z tree.

Qualifiers, also known as subheadings, are used in conjunction with descriptors to convey a particular aspect of a subject. There are 78 qualifiers, for example, Adverse Effects, Diagnosis, Therapy, and so on. MeSH has rules for governing which qualifiers can be used with a given descriptor, as well as which qualifiers cannot be used with a given descriptor. Qualifiers are not part of the descriptor trees. However, they have their own logical hierarchical groupings or families. For example, as listed here, there are three narrower or more specific qualifiers that may also be used to convey the aspect of therapeutic use. The MeSH qualifiers list by hierarchy may be found at the URL that Kate will paste in the chat box.

Supplementary Concept Records, also called SCRs, are terms in a separate thesaurus from the MeSH (Medical Subject Headings) and they are updated daily. Their purpose is to be able to add new concepts rapidly outside of the annual MeSH review process. SCRs are mainly substances such as proteins, drugs, antibiotics, antibodies, toxins and chemicals. However, they are also

SCRS for treatment protocols, organisms, rare diseases, and population groups. For example, several new supplementary concept records were created in response to the COVID-19 pandemic. They are mapped to the main descriptor COVID-19. Catalogers are not permitted to use these terms and instead use the descriptor listed under Heading Mapped To. Now, Kate, we'll walk you through this exercise.

KATE: All right folks, it's your turn. Michael's going to open up a poll from Zoom, so you should see it pop up on your screen. But if you can't, you can use the slide and come up with your own answers. Sharon has described three different types of MeSH terms, so we'd like you to match the three types of mesh terms that she described with their definitions. So go ahead and use the poll if you can, and if not, just use the slide and possibly your handout. If you wish to jot down your answers, we'll give you a minute to do that. [Pause.] A few more seconds to finish up. All right. Looks like everyone who's going to use the poll has used it. So Michael, if you wouldn't mind closing that poll and sharing the results, we'll see how we did.

OK. So the first or the first definition is "primarily substance terms, but also include some protocols, virus terms and rare disease terms" and those are Supplementary Concept Records. The second "describe a topical concept" and those we call Descriptors (or headings). And then third, "describe a particular aspect of a concept." These are Qualifiers (also called subheadings). Thanks very much and I'll pass it back to Sharon.

SHARON: Thank you, Kate. Now I'd like to talk about the MeSH Browser. This tool allows users to search directly for MeSH terms and conduct text word searches of various fields of the records. The top navigation bar appears at the top of every page and I will discuss selected tabs. Click on the MeSH tree icon to go to the MeSH section homepage. Click on "Search" to return to the MeSH Browser homepage. Click on "Tree View" to browse the MeSH trees. Click on "MeSH on Demand" to access a tool that can automatically identify relevant MeSH descriptors from text that is input by the user. Click on the "MeSH (and the current year)" to see the previous or upcoming MeSH vocabulary. And click on "Suggestions" to access the user suggestions for Medical Subject Headings, where instructions are provided for submitting MeSH requests for new or modified MeSH headings. I will provide more specific details about when to make a MeSH request later in this presentation.

The year following the label Medical Subject Headings indicates the version of the MeSH vocabulary being searched. The browser offers two search methods via a drop-down box: FullWord Search and SubString search. FullWord Search looks for complete words only, not strings that are part of a term, word or sentence. And SubString Search, or the partial word search will find records that have a string of characters as a complete term or embedded in a term or word or sentence. Each search method can be further modified to search by Exact Match, All Fragments, or Any Fragment. Exact Match finds terms that precisely match your search term. All Fragments finds terms that include all fragments of a search string in any particular order, equivalent to the AND Boolean search operator. Any Fragment finds terms that include at least one fragment of a search string, equivalent to the OR Boolean search operator.

Searching for terms may be restricted by choosing one of the radio buttons on the left side. All Terms includes Main Heading (Descriptive) Terms, Qualified Terms, and Supplementary Concept Records Terms (SCRs) that you can search collectively or you can select each one individually. The Main Heading (Descriptor) Terms include Preferred Terms, Entry Terms, or variants found in descriptor records. Qualifier Terms include Preferred Terms, Entry Terms, and abbreviations found in qualifier records. And the Supplementary Concept Record terms include the Preferred and Entry Terms found in the Supplementary Concept Records.

There are other fields to search for metadata. The MeSH Unique ID finds Descriptor, Qualifier and Supplemental Concept Records by their record unique Identifier. Search in all Supplementary Concept Records. The Heading Map To (HM) retrieves Supplemental Concept records that are mapped to a particular Descriptor heading. Indexing Information (II) field that is used to refer to other descriptors that are from related topics. Then you have the Pharmacological Action (PA) which finds all chemicals in MeSH that have a PA that matches the term you searched. And the registry number area searches the RN (registry number) and RR (related registry number) of all chemicals in MeSH. It will retrieve records with either a matching CAS registry number, assigned by Chemical Abstract Service, and matching Enzyme Commission (EC Number), the FDA Substance Registry Substance UNI Number, or the NCBI Taxonomy ID number. Users may search all Free Text Fields collectively or individually, which include the Annotation, which in annotation includes free text information for indexers and catalogers concerning the use of the descriptor or qualifier record. The Scope Note includes free text narrative, giving the scope and the meaning of a concept. The SCR note includes free text narrative in the Supplementary Concept Record.

I am now going to switch to my browser to demonstrate a few search options so that you can follow along. Kate will put the link to the MeSH browser in the chat panel. So first I'd like to show you the Exact Match search. The Exact Match finds terms that precisely match your search term. It is particularly useful for known one word searches. It should be used in conjunction with the FullWord search rather than SubString. So let's search for feedback and I'm using Main Heading, and let's see what comes up. And as you see the exact match word search result is for one record feedback, it goes directly there.

Now let's do an example of All Fragments search and I'll search feedback again and notice if you search for feedback using All Fragments button and FullWord, you could use SubString as well, the result is a list of all terms containing the word feedback. Now the descriptors are in blue and they're outdented and the entry terms or the variants are in black and they're indented and you notice the record feedback where it appears and feedback appears in the entry term. And lastly, I would like to show you an example for the Any Fragment search. Let's do feedback once again, but this time let's add a word, psychological, and I will use the SubString search. This time let's see what we get. We did two words this time. So if you search multiple words and select the Any Fragment, the MeSH browser inserts OR between the terms. So I will get feedback OR psychological. And so that broadens your search. And now Kate will walk us through this exercise.

KATE: OK, so for this please open up the MeSH Browser, and you have the option as Michael is showing you, if you have the Zoom poll, you'll be able to answer this in a poll format. Otherwise you can just follow along on your own and we'll go over the answer. But what we'd like you to do is in the MeSH Browser, select SubString All Fragments, and use a search of the main heading or descriptor terms and do a search for psychol feedback and try that and let us know what is included in your results.

[Pause.] OK, we'll give you about 10 more seconds.

All right, while you're finishing up, I'm going to share my screen to show you how to do this. OK, so for this question we were asking you to do a SubString search and then All Fragments and searching in the Main Heading (Descriptor) terms for this search string psychol feedback. OK and when you run that search you can see that it is not necessary to enter in whole words for all fragments or any fragment as long as the SubString option is chosen. You can use partial words for your searching and you can retrieve word variations with those strings, giving yourself more flexibility in your search. All right, thanks for playing along. I'll pass this back to Sharon.

SHARON: Thank you, Kate. And as Kate already told you, these are the answers and these are the recommended settings for catalogers: SubString for the search method, for the search button All Fragments, for Sort by use Name, as opposed to Relevance, For the Results per page use 1000 as opposed to 20 per page. And for the search option radio button we generally choose Main Heading (Descriptor) terms. Of course the settings should be adjusted as needed. When the user changes the settings, they are retained for subsequent searches and sessions.

When a descriptor is selected from your search results, there are four separate tabs for viewing the record: Details, Qualifiers, MeSH Tree Structures, and Concepts. Each tab shows the descriptor searched and the label MeSH descriptor data and the MeSH year. The Details tab is the default view when a descriptor is retrieved. Fields or elements within the record may be linked to additional sources such as related records, MeSH terms and scope notes, tree locations, entry terms or variants, and other similar information. Note that now the NLM classification number is shown when a MeSH main heading or descriptor points to a single number in the NLM classification. A list of specific qualifiers allowed in combination with the descriptor appear on a separate Qualifiers tab in the MeSH descriptor record. Also known as AQs or Allowable Qualifiers, they are presented as full words and two letter abbreviations. Qualifiers are hyperlinked to the specific qualifier record. Clicking on the MeSH Tree Structures tab provides a display of a section of the tree to which the descriptor belongs. Browse the MeSH trees by clicking on the plus sign to expand the tree at a specific node. Additional information about the concepts of the record for semantic processing can be viewed in the Concept tab. These can be viewed by expanding or collapsing specific parts, by clicking on the term names, or by using the Expand All/Collapse All button on the right side. To learn more about these elements, you may see the URL that Kate will post in the chat box. And now Kate will walk through this through this exercise.

KATE: All right, thanks. So Sharon just showed you some different components or tabs of the MeSH Browser individual records, so we'd like you to explore those a little bit. We're going to

use the recommended cataloger search settings of Main [Heading], SubString, All Fragments, Sort by Name and 1000 Results and run a search for fostering. When you find the preferred term, tell us what that is using either the poll or you can use chat if you don't have the poll feature and tell us what related concepts are listed using the feature that Sharon demonstrated from the MeSH record in the MeSH Browser. I'm sorry about the noise. Garbage truck just showed up.

[Pause.] Looks like most folks have it. I'll give you 10 more seconds.

All right, I'm going to share my screen and demonstrate this. OK, so let's just review real quick the the settings we're using of SubString, All Fragments, Main Heading (Descriptor) terms and we're sorting by name with 1000 results per page. And we're searching for fostering and there's one specific direct hit. So it takes us directly to foster home care and that is our preferred term for fostering. And then Sharon showed you these different tabs, different components of the record. And for related concepts, we're looking for the Concepts tab. And here we learn that fostering is a related concept, kinship care is a related concept and adult foster care is a narrower concept. So there are your answers. And back to you, Sharon.

SHARON: Thank you, Kate. And again, there are the answers. Now I'd like to talk about a specific field in the MeSH Browser record, the annotation field. The annotation (AN) field of the MeSH Browser record provides more guidance for consistent application of MeSH by indexers and or catalogers. Topical annotations provide guidance to both indexers and catalogers. They include coordination with other headings, use of subheadings, context of term, similar or related terms to consider, and similar terms that may cause confusion.

Guidance is sometimes provided for coordination of a descriptor with another term. In this example, the descriptor Unilateral Breast Neoplasms has the annotation coordinate IM with histological type of neoplasm (IM). Then the MeSH vocabulary distinguishes between the site of the neoplasms such as breast neoplasms, brain neoplasms, lung neoplasms, et cetera, and its histological type such as adenocarcinoma or sarcoma etc. Note you may encounter acronyms IM and NIM in annotations which pertain to indexing only IM and NIM comes from the time when terms describing major points of the article were printed in the index medicus. IM meant printed in the index medicus and NIM meant not printed in the index medicus. Currently, IM terms are the main point of the article, while NIM terms are secondary terms supporting the major points of the article, and I will talk later about how cataloging indicates primary and secondary headings in a bibliographic record.

Commented [KM1]: I fixed this from some made up word. 😆

Annotations may include guidance on the use of subheadings or qualifiers. In this example, for the descriptor Rhinosporidium, the annotation indicates to use the more specific subheading parasitology on other terms to indicate the presence of Rhinosporidium, rather than to use the broader subheading microbiology. So for instance, for a work on Rhinosporidium in nasal smears, you would probably coordinate it with the descriptor nasal polyps and a subheading parasitology. Annotations can put terms in context by indicating what the descriptor can or cannot be used for. For example, the annotation on this descriptor, cell survival, indicates it is not for microorganisms. The annotation may also alert the user about similar or related terms available, as in this example for Glycemic Load, which indicates the glycemic index, a sibling to

this term, is also available. Sometimes descriptors may seem to be similar, but they are not. The annotation alerts the user not to confuse similar terms. For example, Accommodation, Ocular, which is the adjustment of the lens to distance, is not the same as Adaptation, Ocular, which is the adjustment of the eye to light. Now, Kate, we'll lead you on this exercise.

KATE: All right, let's explore MeSH on your own again. This time we have a couple of questions exploring the topical annotations. So I think we have another poll for this one if you'd like to enter your answers there. So go ahead back to the MeSH Browser and see if you can find out what other terms you might add when using the heading Ablation Techniques. And figure out which is the correct term to describe taking leave to care for parents, Family Leave or Parental Leave. Give that a shot and we'll be right back.

[Pause.] I think most folks who are playing along have answered, so 10 more seconds please.

All right, I'm going to share my screen and we'll do this together and starting with Ablation Techniques. If we search for this in MeSH, we find the heading for this exercise, we're exploring our annotations and here is the annotation of interest. You see that when you use Ablation Techniques, you might consider coordinating with the organ or disease with a subheading of surgery. Looks like most folks got that right.

And then for the second question, we're looking for the term to describe taking leave to care for parents. So we'll try the first one here, Family Leave. And again, looking for those useful annotations. Family Leave is used to care for siblings, parents, or other family members. So that's the right one. And it says do not confuse with Parental Leave. And if you would like to learn more, you might jump over to that heading to read the scope note for that one as well. So looks like, yeah, the majority of folks got those right. So, great. Thanks. Back to you Sharon.

SHARON: Thanks Kate. And again, here are the answers. We've covered topical annotations. Now I would like to talk about cataloger specific annotations. Annotations applicable specifically to cataloging are prefaced by the word CATALOGER in all capital letters followed by a colon (:). They include CATALOGER: Do not use, CATALOGER: Use NAF entry, Coordinate with specific NAF, Used for specific material only, CATALOGER: Used by collaborating partners only, and I will discuss also the annotation INDEER: Do not use. There are some cataloger specific annotations that also includes instructions for indexers. Many of the generic umbrella or group heading MeSH terms will contain the annotation used for searching INDEXER: Do not use, CATALOGER: Do not use. These type of descriptors are not used by catalogers or indexers, and they're just placeholders in the MeSH tree structure.

Descriptors with the annotation CATALOGER: Use NAF entry cannot be used by catalogers, but these descriptors are usually for proper names of corporate bodies or work titles. Catalogers should use the appropriate term from the Name Authority File (NAF) rather than the mesh descriptor. For example, catalogers would use the NAF entry United States. Medicare Access and CHIP Reauthorization Act of 2015 rather than this MeSH descriptor which starts with Medicare Access and CHIP Reauthorization Act of 2015, I will discuss later how these types of NAF subject entries are used on bibliographic records. Sometimes the annotation indicates for the cataloger to coordinate with a specific NAF entry. For example, the cataloger could use the

generic MeSH descriptor Blue Cross Blue Shield Insurance Plans and coordinated with the NAF heading Blue Cross and Blue Shield Association. NLM catalogers use descriptors with the annotation for specific materials. For example, the Publication Type annual report has the annotation cataloger used for serial publications only, and it's used by serial catalogers but not monograph catalogers, but this reflects NLM's practice. Other libraries are not obligated to follow this annotation. Descriptors with the annotation Used by collaborating partners only are not used by NLM staff catalogers. NLM collaborating partners are generally outside institutions such as the Kennedy Institute of Ethics (KIE), etc., who have created cataloging records for NLM. Again, this reflects NLM practice. Other libraries are not obligated to follow this annotation. Catalogers may use descriptors, annotated INDEXER: Do not use. Generally these are for very broad headings that indexers may not find useful for indexing specific articles. And again, I will turn it over to Kate.

KATE: All right, you know what to do this. For this exercise we have two questions and for this discussion of cataloger specific annotations, we'd like you to find out which of the following headings you can use for cataloging: Age Groups and/or Animation. And secondly, what heading do you use for Alcoholics Anonymous? So again, we have a poll if you'd like to fill that out. Otherwise, you can use chat or just use your handout to jot down your answers and we'll give you a minute or two to answer those questions. Thanks.

[Pause.] Looks like most folks have this. But let's say 10 more seconds.

All righty. Sharing my screen again. That is, if my mouse will cooperate. Yes. OK, so which of the following headings can you use for cataloging? Can you use Age Groups? All right. So we're looking right for that annotation. CATALOGER: Do not use. So that's a no, it won't use Age Groups. Let's try animation. OK, so for this one, it does say that indexer should not use. It does not say that cataloger should not use it. So yes, you can use this heading for cataloging. So the answer to #1 was Animation.

And then what heading should you use for Alcoholics Anonymous? Glad I typed that in earlier. Don't have to stumble over my typing. OK, so here in the annotation it says clearly that catalogers should use the NAF ([Name] Authority File) entry for Alcoholics Anonymous. So that is the answer to #2, the NAF entry and it looks like, yeah, the vast majority of you got both of those right. So great job. Thank you. And back to Sharon.

SHARON: Thank you, Kate. All right. And as we saw the answers for the exercise, just in case you're interested, cataloger specific annotations may be searched by typing Cataloger in the search box and choosing Annotation in the Free Text Field Search. Once catalogers determine the significant characteristics of a work, they must then translate the subject content into the terms of the controlled vocabulary to locate the main concepts. As you may recall, as Kate has pointed out, the search method: SubString, search button, All Fragments, Sort by name, Results per page, 1000. The search option, radio button, Main Heading, and the settings of course should be adjusted as needed. Now I'm going to switch to my browser again to demonstrate a few search options so that you can follow along. Kate again will put the link to the MeSH Browser in the chat.

So this one, you have a work that you catalogued and as a cataloger I examine the work. I look at the subject rich contents of the sources, such as the title page, the table of contents, the preface, and then I determine and try to find out what the main concepts are and then as I said, translate that into the control vocabulary. So suppose I have a work on inflammation of the stomach. So I'm going to use All Fragments and I don't know if MeSH has a subject called information of the stomach, but let's see, I'll try. I'm using All Fragments, Main Heading and at last there's no subject heading there. Now a tip is try not to search with prepositions or conjunctions in your in your search. So let's just take the two main concepts and see if I get any different search results and again, nothing for that. Then if you don't have the two or three main concepts, probably search them one by one to see what comes up. So I've searched that again just using stomach. I'm going to get some retrieval and I see that there is a descriptor for stomach. And again, a helpful annotation tells me if I want to index or catalog work on inflammation of the stomach, the inflammation (of the stomach) actually has its own MeSH heading gastritis. And so that's the one I would use for that.

But another way that you can search is to use another field. Let's take those two concepts again, but this time I'll search in the Free Text Field. You never know what comes up in annotations. So I could have gotten to the same spot again by using the Free Text field and you see the main descriptor comes up stomach and then an annotation here gives me the guidance that I need to use guest gastritis. So always be flexible in your searching. And now I'll let Kate walk you through this exercise.

KATE: Great. So let's follow Sharon's advice and try a search for Cardiac Impedance and maybe play around a little bit with the search options to see how you might describe Cardiac Impedance with a MeSH term. So go ahead and get back to the MeSH Browser and try to find the concept of Cardiac Impedance and Michael's put up a poll if you'd like to enter your answer there. Otherwise, you're welcome to just jot it down elsewhere.

This one's a little trickier, so I probably won't wait quite as long, thinking that maybe some of you might have trouble finding it. So let's say let's say 10 more seconds.

All right, so we're looking for Cardiac Impedance. So if we do the recommended search that we've been using so far: SubString, All Fragments, Descriptor terms, we get a little frustrated. Now we can't find that. So we need to learn to be flexible as Sharon suggested and instead of searching for the Main Heading terms we can try searching in the Free Text Fields and as soon as I do that impedance cardiography or inverted cardiography, impedance is a preferred term that we run across and if we take a look at the scope note that's what we were looking for. In fact impedance cardiography is right here as an entry term, a variation of what we searched. So if you don't know the exact search term, you might try expanding your search into those and annotation and scope note and all those other free text fields. Back to Sharon.

And it's time for questions. All right. So I see one question that Sharon answered in chat, but I'll just verbalize it. Fred-- Hi, Fred. Fred is asking, **are there plans to link from the MeSH term to the Name Authority File (NAF) from the Library of Congress in the MeSH record?**

SHARON: And the answer is, as I told Fred, not at this time. No plans for that.

KATE: OK, we'll put that in our suggestion box. Thank you.

SHARON: Thank you.

KATE: If there are other questions, I don't see any. So maybe we'll wait just a few more seconds in case somebody's typing and wants to get their question in at this time. We'll have another question period towards the end. Unfortunately this Zoom webinar doesn't let us see if someone's typing. I know that's a great feature of some other sorts of webinars, but we don't have that feature. So I can't tell if somebody's in the middle of typing out a very excellent question. So if we don't see your question right now, we will get to it at the end in our second question period. OK. So I guess we'll move on.

SHARON: Thank you, Kate. The catalogers follow certain subject analysis principles in their application of MeSH. Here are some of the subject analysis principles observed by catalogers: specificity, "rule of three," specialty headings, special considerations for Supplementary Concepts, and format of subject headings in Bibliographic records. Catalogers use the most specific headings available. There is an order of preference. Pre-coordinated descriptors are contained in MeSH for frequently encountered subjects and they are the first order of preference. But if no pre-coordinated descriptor is available, the descriptor/qualifier (main heading/subheading) combination is the next preference. And if neither of these two options are available, then the cataloger must coordinate two or more descriptors. For example, to convey the concept of surgery of the biliary tract, you would use the pre-coordinated descriptor biliary tract surgical procedures. The subheading surgery is not allowed with biliary tract. Instead, the user is directed by the entry combination to the correct pre-coordinated descriptor.

On the other hand, no pre-coordinated descriptor is available to convey the concept of surgery of the liver, therefore, you would need to use the descriptor liver plus the qualifier surgery. Multiple descriptors may be needed to convey a concept. For the concept of Research in occupational therapy you would use two descriptors: Occupational therapy and Research. However, for the concept of research in nursing you would use only the pre-coordinated descriptor Nursing research.

The "rule of three" principle is an exception to the principle of specificity. If more than three specific concepts treed under a more general MeSH concept common to all are discussed, catalogers go "up the tree" to the broader term. Reminder, MeSH is organized hierarchically into 16 trees and each MeSH term is located in one or more trees. The tree structure goes from more general terms to more specific terms. So for example, if you're cataloging a work about the following topics: anuria, enuresis, glycosuria, and hematuria, then you assign the overall descriptor urination disorders. And I'll turn it back over to Kate.

KATE: All right. So we have a one question exercise here, hopefully a fun one. What descriptor(s) would you use to describe a work about Anger Management Therapy, Aversive Therapy, Relaxation Therapy, and Sleep Phase Chronotherapy? And we have a poll for this one too, if you'd like to use it. Take a look in the MeSH Browser and see if you can find the answer.

[Pause.] 10 more seconds, please. We're real close to having everybody put in their answer. It's just I think one or two more people. OK.

There are a couple different ways you could approach this and some might take longer than others, but to find a descriptor that you'd use to describe works about Anger Management Therapy, Aversive Therapy, Relaxation Therapy, and Sleep Phase Chronotherapy. So I think you probably guessed right that we're talking about the "rule of three" here. So if we had you brought up, anger management therapy. Yes, there we go. So I might look at the MeSH tree structures and see if I had to work with all of these different terms. Once I pull up the MeSH tree structures, I can actually find all of the terms that were mentioned in this work and they're all treated under behavior therapy. So that's where the "rule of three" applies and you would apply the term behavior therapy for work that describes more than three of these narrower terms. So that's the answer. And back to Sharon.

SHARON: Thank you, Kate. And of course there's the answer. Catalogers and indexers need to distinguish between the specialty and the disease procedures, processes, etc. The MeSH Browser record will usually contain a note or a MeSH annotation with specialty (SPC) only, or the words used for discipline only, which designates whether the MeSH is a specialty heading. For example, the descriptor bariatric medicine is labeled in the annotation as specialty only, but the user is directed to the corresponding descriptor bariatrics for the procedures. The Disciplines and Occupations [H] tree contain many of these specialty headings, and many terms in this category are also located in other categories as well. Many of the specialty headings have disease counterparts in the Disease [C] tree. Reserve the specialty headings for works about the particular field. Use the disease term for works about the diseases and do not add the specialty as a coordinate even if the author is using the specialty term. And Kate will walk through this exercise.

KATE: This one you do not need to go to MeSH to answer because I think if you take a look at the question you might actually know it, but if you would like to look it up, you can do that too. What descriptors would you use to describe a work titled The Status of Diagnosis in Endocrinology? So your options in the poll are endocrinology diagnosis or endocrine system diseases diagnosis. So what did Sharon just say about specialty headings?

I'm going to jump right in and share my screen for this one. We're running a little short on time and I want to make sure we get to everything and it does look like maybe a few of you needed to look this up. So let's see. So we're looking for describing a work entitled The Status of Diagnosis in Endocrinology. So you might think to look for endocrinology, but if we take a look at this term, we have a couple of clues here that we're in the wrong place. One is in the scope note saying that it's a specialty just like Sharon described, it's a specialty of medicine and it is concerned with the endocrine system. And if we look at the "See also" we also see another hint here endocrine system diseases. So if we're not talking about a work describing the specialty, but actually a work about endocrinology and endocrine system diseases, I think we're looking for this one. Am I right, Sharon?

SHARON: That is right, Kate.

KATE: All right, thanks. OK, back to you.

SHARON: Thank you. And just to prove it, there we are. So many special tree headings are in the [H] tree and they have the corresponding phenomena and process counterparts in the [G] tree. Catalogers need to distinguish the field of study from the phenomena terms and that will generally refer you from the specialty to related phenomena in an annotation scope note or See also reference. And if you use specialty headings when you work at discussing the field or profession, as we have said, usually covering the topics is trends or history or education and economics. For example, if a work on the future of biochemistry is the sign the specialty heading Biochemistry with the subheading Trends. A few headings are marked as SPC, such as Pediatrics and Geriatrics, but they have no corresponding disease descriptors and in this case the spec heading is used as a synonym with general works on pediatric diseases or geriatric diseases. The Supplementary Concept Records, as we have said before, cannot be used by catalogers and each SCR points to one or more descriptors in the Heading Map to field which should be used instead. SCRs, as we said, are created daily and they do not undergo the rigorous review procedure that MeSH records do. And the SCR is clearly labeled MeSH Supplementary Concept data. For example, this SCR Oxyconazole is mapped to the descriptor emitazoles. And Kate will walk you through this exercise.

KATE: Yes, thanks. This is an important one because you will run across Supplementary Concepts pretty often in MeSH. There are a lot of them. What descriptor or descriptors would you use to describe a work about watermelon stomach disease? Take a look in the MeSH browser and see if you can find the correct descriptor for watermelon stomach disease.

[Pause.] Let's say 10 more seconds to do this. All right, I think folks are having a little trouble with this, so let me share my screen.

All right, if you go to the MeSH Browser and you search for watermelon Stomach disease as a Main Heading, you won't get any results. And that's because it is not a preferred term in MeSH. I might then try All Terms and it takes me right to this Supplementary Concept Record. So as Sharon explained, these types of terms are not used in cataloging. So what you need to do if you run across one of these Supplementary Concepts, it means that the concept is accounted for in MeSH but this specific concept actually is mapped to a different term in MeSH, and in this case it's Gastric Antral Vascular Ectasia. So it was the second choice in the poll if you played along with that. So again, if you're looking for a concept and it's described in MeSH with a supplementary concept, look for this Heading Mapped to and that will tell you the MeSH term, which is usually a broader term that you're going to be using for cataloging. And Howard is sharing also that he found it under Main Headings, Any Fragments and that works too. Thanks. All right, excellent. Back to you, Sharon.

SHARON: Thanks, Kate. That was a great example. And there's the answer again. Now I'd like to talk about how catalogers format subject headings and bibliographic records. NLM catalogers use the MARC 21, which stands for Machine Readable Cataloging coding. The 6XX fields are used in the bibliographic record for recording subject access entries. Please put in chat whether or not your library uses MARC in your bibliographic records. All NLM MARC 6XX fields have

a second indicator too, to show that they come from the MeSH thesaurus. NLM records its subject terms in a deconstructed or faceted form. Topical descriptors and topical subheadings are recorded in the Mark 650 Subfield a and Subfield x fields, respectively. Topical descriptors are identified as either primary or secondary headings via MARC coding. Primary subject headings are coded with the first indicator of 1, and secondary subjects are assigned the first indicator of 2. Primary subject headings, generally one but you may have up to three, appear first in the bib record, followed by secondary subjects, and primarily generally corresponds with the classification number to be assigned. Optionally, libraries may choose to follow NLM practice with the classification and identify topical subject headings as either primary or secondary headings. Note indexing records in the PubMed use the asterisk (*) to indicate the primary headings and their subjects are listed alphabetically. And they are designated as IM for indexing as I indicated earlier.

Geographic terms and their topical subheadings are in MARC 651, subfield a and subfield x fields. Publication Types or genres are recorded in MARC 655 fields and they do not have subheading x. Here's an example. A work on acupuncture for chronic low back pain would have the primary subject low back pain with a qualifier therapy, and secondary subjects acupuncture therapy and chronic disease therapy within the subheading. Another example is a directory of services for the aging in New York State. There's a pre-coordinated descriptor health services for the aged. This is the primary focus, so the first indicator is 1. It discusses a geographic area, so 651 New York is added. It is a particular publication type, so 655 Directory is added.

As mentioned in the earlier slide, catalogers use name and title headings from the [Name] Authority File (NAF) rather than MeSH. These names and titles are recorded in the 600-630 fields. Personal names used as subjects are recorded in MARC 600 field. Corporate names used as subjects are recorded in the Mark 610 field, conference names in the 611, and works titles used as subjects are recorded in MARC 630 field NLM codes. The second indicator is 2. They are coded as 2 coming from the MeSH, but actually are taken from the NAF, but they are associated with the MeSH however.

Because NLM catalogers and indexers work closely with the literature, they tend to submit a high volume of MeSH requests. However, anyone can submit a MeSH request for a new term or modify an existing term. You can use the Suggestions tab on the MeSH Browser homepage that I showed you earlier. When you click on this Suggestions tab, you are taken to a guidelines page for user suggestions, which gives you instructions while filling out the online request form. To access the suggestion form, click on the right to the help desk link. But how do catalogers know when it is time to submit a new MeSH request? You can submit a new MeSH request for frequently occurring concept like antiracism, which the NLM cataloger submitted and was accepted.

Or perhaps there's a general concept that is needed to cover several available MeSH in the MeSH vocabulary and a new MeSH may be submitted to express a concept which is currently requires 2 or more headings. For example, catalogers had to post-coordinate adolescent and mothers for the concept of adolescent mothers, but many people were using MeSH pregnancy and adolescence

which does not cover the concept of motherhood. The NLM catalogers requested adolescence mothers as a pre-coordinated concept.

Another reason to request a new MeSH could be because the concept has been or likely to be handled inconsistently by different catalogers. Catalogers may also submit changes to the entry terms or qualifiers. For example, the NLM catalogers suggested that nurseries be changed to nursery, infant. To clarify this, nurseries for infant care facilities and not garden nurseries and NLM catalogers also requested that plant nurseries be added as an entry term to gardens, and catalogers may also request or add and delete qualifiers as needed. Now we will pause for questions.

KATE: All right, so we have a few minutes left to take some questions**. I saw a question earlier on about the "rule of three" and whether MTIX follows the "rule of three."**

Yes, not the subject of today's class. I would invite anybody interested in MTIX to join us for our June PubMed office hours when you can ask specifically these types of questions of our indexing staff who know much better than I about MTIX. My limited understanding of MTIX is that there is no such rule, but the algorithm would point to the broader term. So let's ask indexing so we get a better answer than I have.

OK, let's see. There was another question I thought-- Oh, yes, here we go. Fred's asking, **is it possible to download the MeSH database in MARC format to use as an authority file?**

SHARON: Yes, there is. I just saw the question and I'll put it in the chat. And if Kate has any other questions to address, I'll look for that.

KATE: Thanks, Sharon. I'm just going to look again through the chat to see if I missed any. Lots of people who use MARC.

SHARON: Oh great, I'm trying to-- There is a there is a page dedicated to the various ways you can download various formats of MeSH, such as the MeSH RDF and for the MARC as well. And I will try to find that. If you go to the main MeSH page, click on that tree at the top, there's at the bottom-- Let's see am I still sharing my screen? Can you see it, Kate?

KATE: Yes, you're there.

SHARON: Thank you. And there's a link to download the various forms of MeSH and here's the MARC format. So it will give you the instructions there and let me put that in chat and there you are. Oh, you found it. Great.

KATE: Yeah, I would just add that it's linked right from the MeSH page as well. But the NLM Data Discovery service is a nice catalog of all of our different data that you can download, including MeSH data. So I'm just going to put a link to that in chat as well. In case you haven't explored it yet, I think a lot of people aren't aware of it, so I thought I'd plug it a little bit here. If you're looking for NLM data, you can go to Data Discovery and use that service to download data as well.

And let's see, any other questions? Well, it's just about time to wrap up, but if you do have any last minute questions, put them in chat. OK, so let me see.

So if you'd like to learn more about MeSH, that same link that Sharon just shared can take you to the MeSH sections pages. Let me see. I'm going to put a link right to the home page in chat, and you can learn more about MeSH, all the different types of MeSH terms, the latest updates, all that sort of wonderful stuff you can find on the MeSH page.

And then we always remind folks to pay attention to the NLM Technical Bulletin, which is where you would go to find news about any NLM product or service. And you can sign up for regular updates.

And if you want to learn more about cataloging, check out the Metadata Management Program homepage. I'll put that in chat as well.