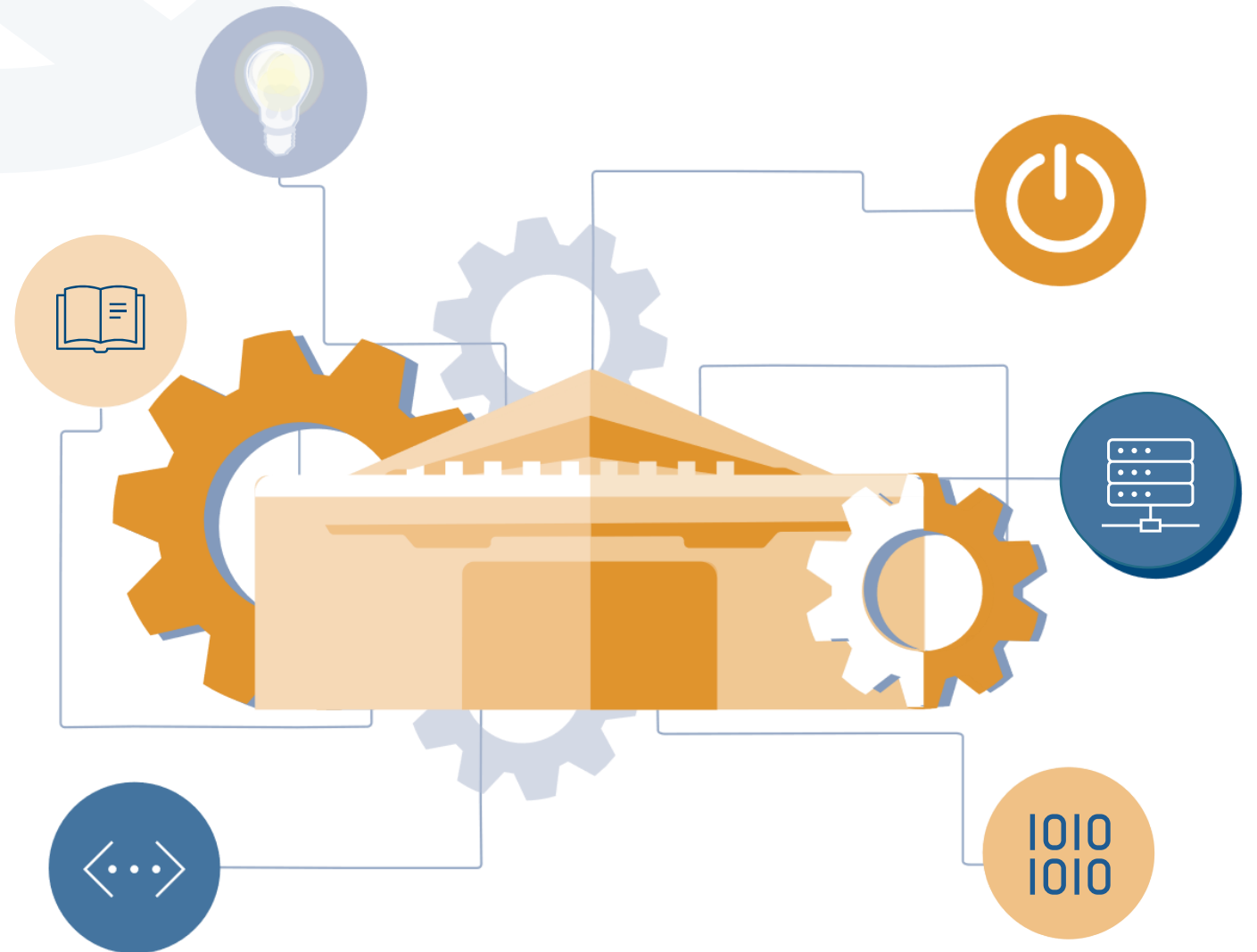


MeSH

Medical Subject Headings Update

June 30, 2022

Massachusetts Health Sciences Library Network (MAHSLIN)



National Library of Medicine

MeSH Update Agenda

- History of MeSH
- Components
- Users & Stakeholders
- Request & Review Process



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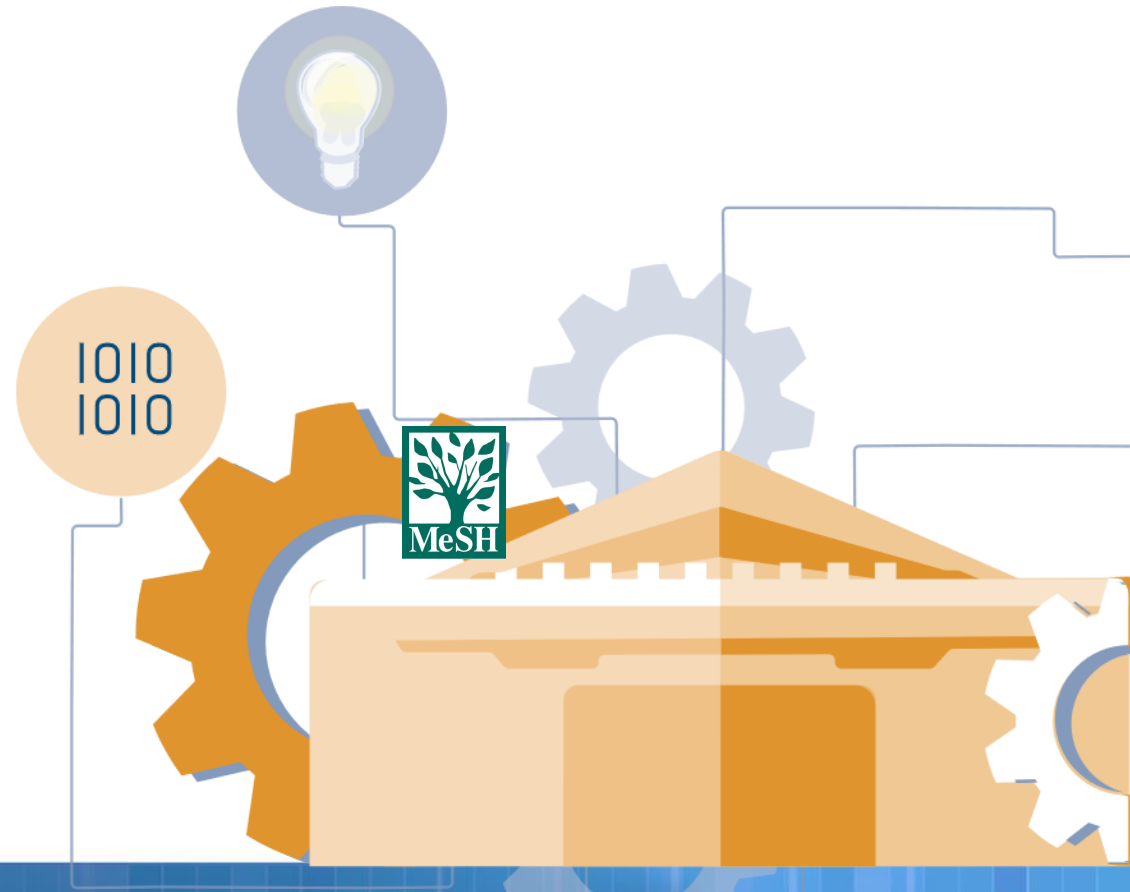
MeSH History

History of MeSH

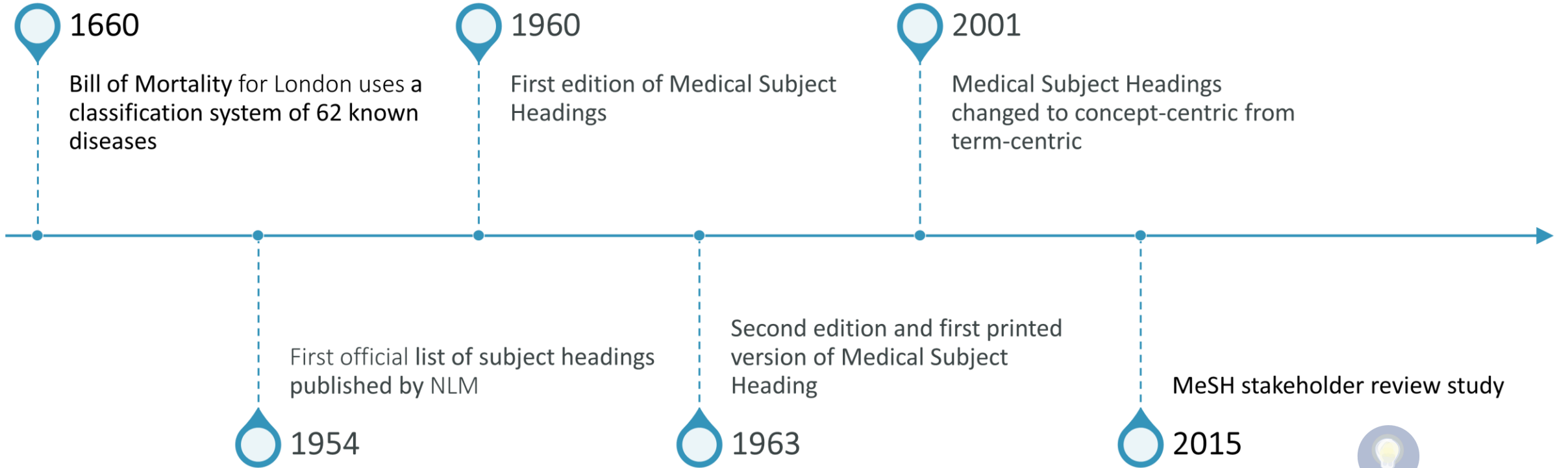
Components

Users & Stakeholders

Request & Review Process



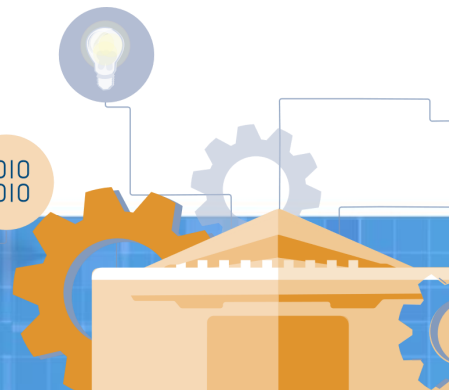
History of MeSH



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1010
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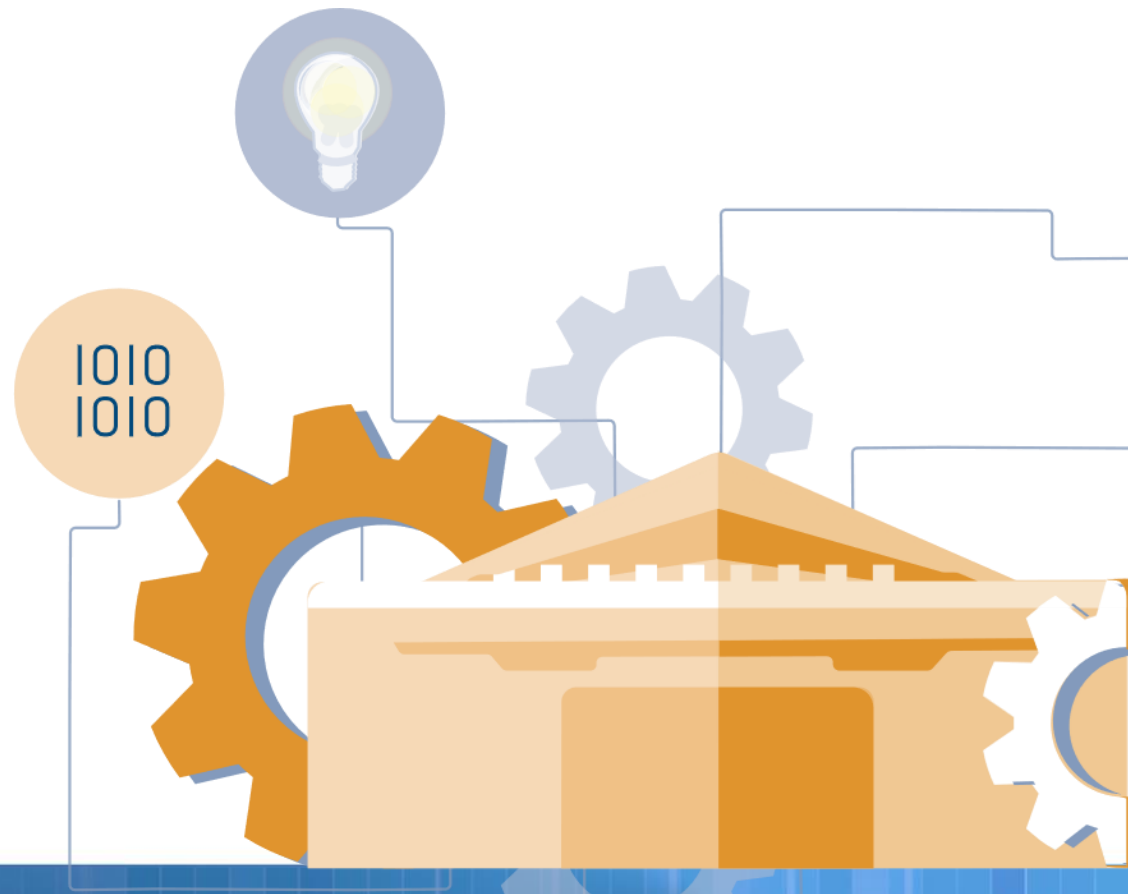
MeSH History (continued-1)

History of MeSH

Components

Users & Stakeholders

Request & Review Process



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Component update cycles

- MH and SH updated released on an annual basis every fall.
- Supplemental Concept Records (SCRs) are created daily and distributed nightly Monday-Thursday.
- Users can access MeSH data through Web interfaces (MeSH Browser and the MeSH database)
- Downloadable data set from the NLM Data Distribution Program.
 - XML, ASCII, MARC 21, and RDF.

Descriptors (MH) 30,194

- DC1- 29,607 (Topical)
- DC2- 187 (Pub Type)
- DC3- 2 (Check tag)
- DC4- 498 (Geographic)

Supplemental Concept Records (SCR) 318,184

- easier to make
 - daily instead of yearly update
 - retain all important MeSH fields for searchers (e.g., synonyms, tree (via Heading mapped to), frequency)
 - making a boutique terminology "MeSHfy"
-
- CC1- 245,823 (Chemicals)
 - CC2- 1,217 (Protocols)
 - CC3- 6,533 (Diseases)
 - CC4- 65,206 (Organisms)

Subheadings (SH) 76

- Also called qualifiers

MeSH History (continued-2)

History of MeSH

Components

Users & Stakeholders

Request & Review Process

1010
1010



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NLM Users

- Indexing Cataloging
- History of Medicine Division
- Unified Medical Language System
- Medical Text Indexer
- Genetics Home Reference
- MedGen



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Other Stakeholders





2020 MeSH & MeSH RDF Usage Study

444 Respondents

- 346 respondents fully completed the survey.
- 98 respondents partially completed the survey.

164 Products

- Identified as using MeSH data.
- Products were wide ranging.

25% of Respondents

- Reported that they provide an application, tool, or system that utilizes MeSH data.



What We Heard

Uses

- Indexing
- Cataloging
- PubMed
- UMLS
- Content Mapping

FAIR Principles

Findable
Accessible
Interoperable
Reusable

Needs

- Training
- Documentation
- Content development



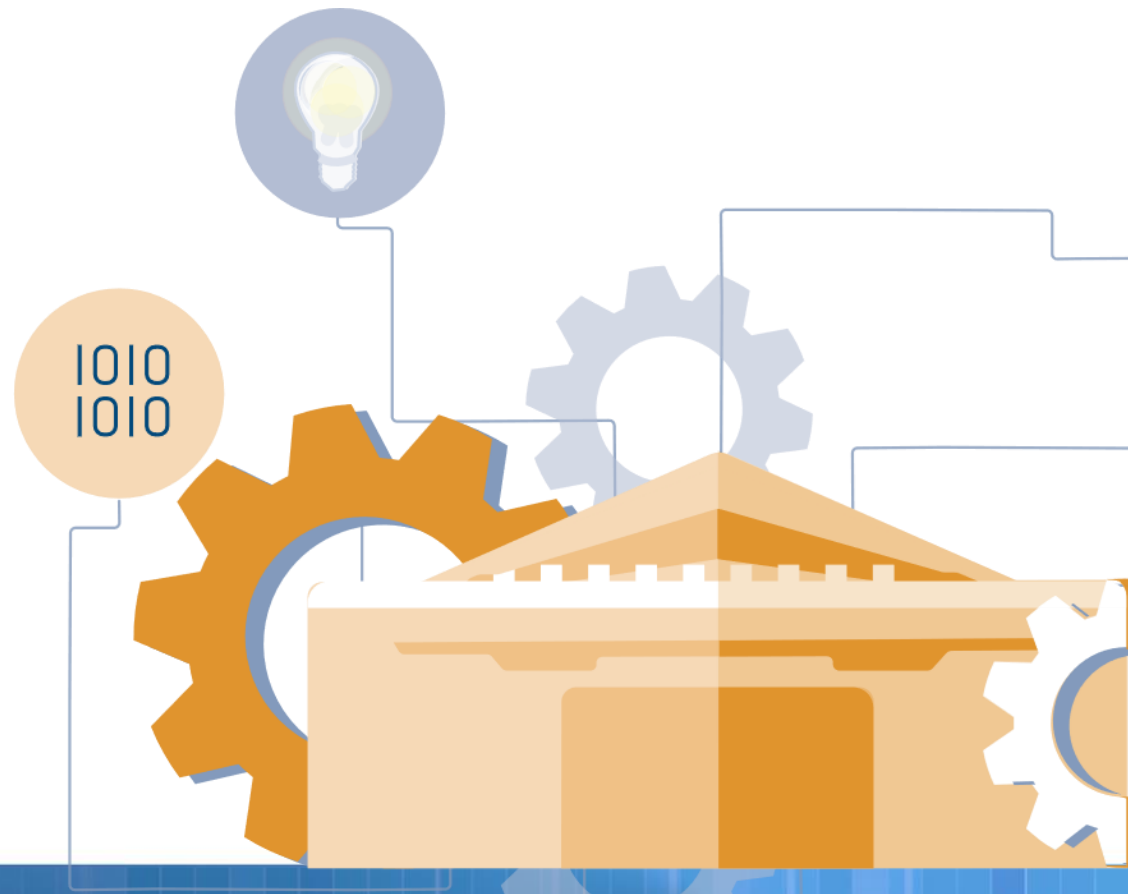
MeSH History (continued-3)

History of MeSH

Components

Users & Stakeholders

Request & Review Process



Review Process Principle

- NLM follows a consistent, thoughtful, and deliberate process informed by stakeholder input.
- NLM receives approximately 700 submissions annually.
- Seven review meetings are scheduled throughout the annual MeSH production cycle.
- This process includes review of feedback and requests from internal and external stakeholders through MeSH suggestions
- Each MeSH request is assigned to a staff member with the subject specialty who drafts recommendations for review by the MeSH Section.

Review process Principle- continued

- Where there are gaps in knowledge, NLM engages SMEs across NIH, other federal agencies, and externally for input.
- The MeSH Section then determines whether to add or modify MeSH vocabulary based on various factors (e.g., literary warrant, previous indexing, and special needs for under-represented fields, and guidelines from DHHS and existing federal government standards).
- Decision-making during review meetings is consensus-based.
- Announces updates via the MeSH webpage and the NLM Technical Bulletin.

Is My Heading Appropriate for MeSH?

Determine
the heading's
meaning.

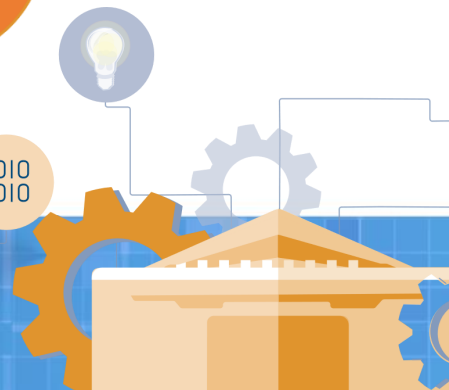
1

Ask yourself,
"Is it in MeSH
already?"

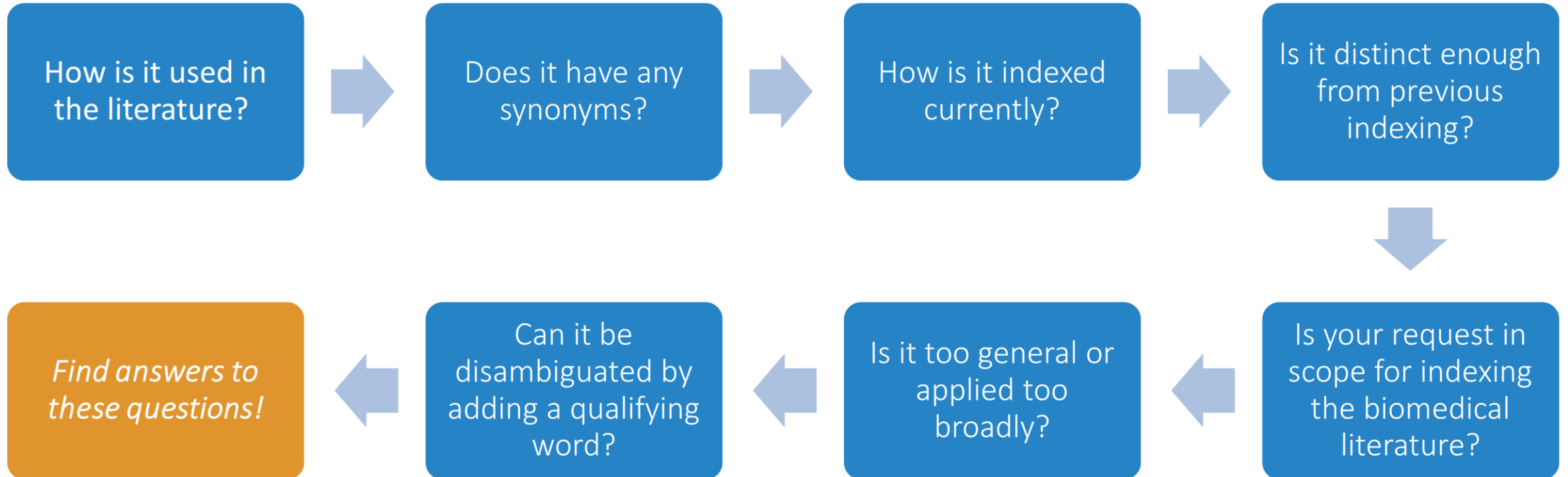
2

Does it have
high posting
in PubMed?

3



Step 1: Determine Heading's Meaning



Sources & Tools for Step 1

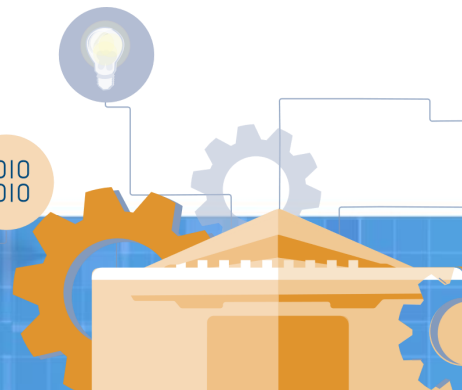
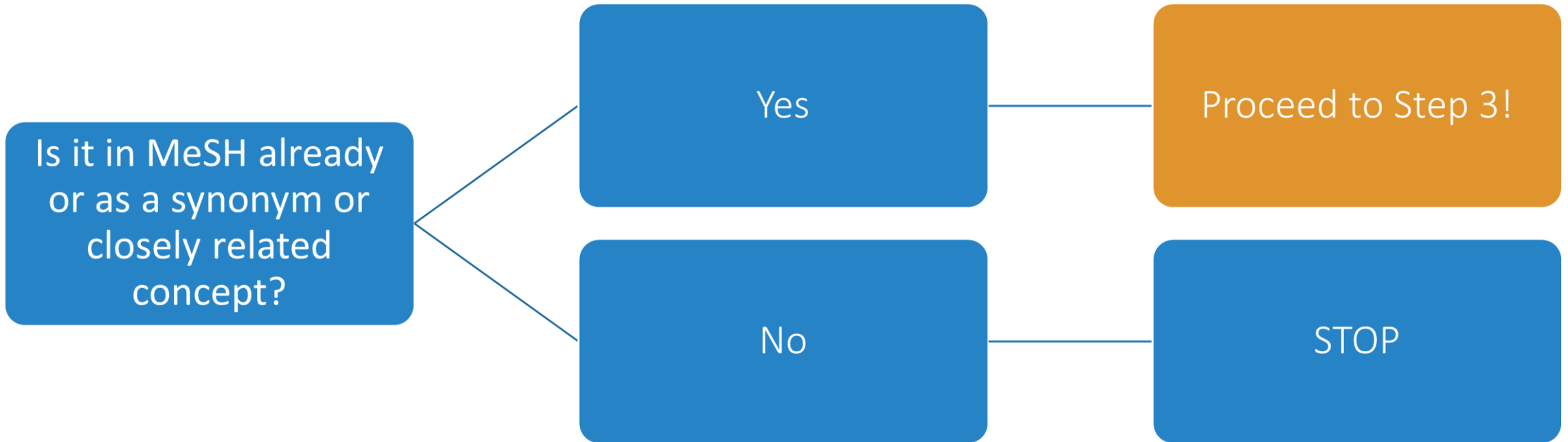
To find alternative terms, relationships to other headings; semantic types, definitions, and previous indexing, use:

- **PRIMARY SOURCE**
- MeSH Browser and MeSH on Demand
- UMLS Browser
- PubMed
- MeSH Authority Sources
- NCBI Taxonomy



UMLS Metathesaurus Browser

Step 2





Step 3



Does it have high posting in PubMed?

- 100 occurrences in titles of MEDLINE-indexed articles
- Or not so high but a lot recently (20 or more in the last 5-10 years **and** significantly increasing)
- Not a fad? Had a lot of posting a few years back
- Not in only one journal or by a single set of authors
- Not in only a restricted, narrow field?
- High for a commonly occurring disease?

Other Ways to Add MeSH terms

MeSH works on special projects to harmonize data, represent under-served domains.

Recent Projects

- ORDR
- Medicinal Plants
- NCBI Taxonomy
- SDOH
- PFAS
- Ethnic Minorities

Outstanding Projects

- Population Minority
- PROMS
- Anatomy
- BRAIN
- CAS
- Space Medicine
- OT
- American Colleges...

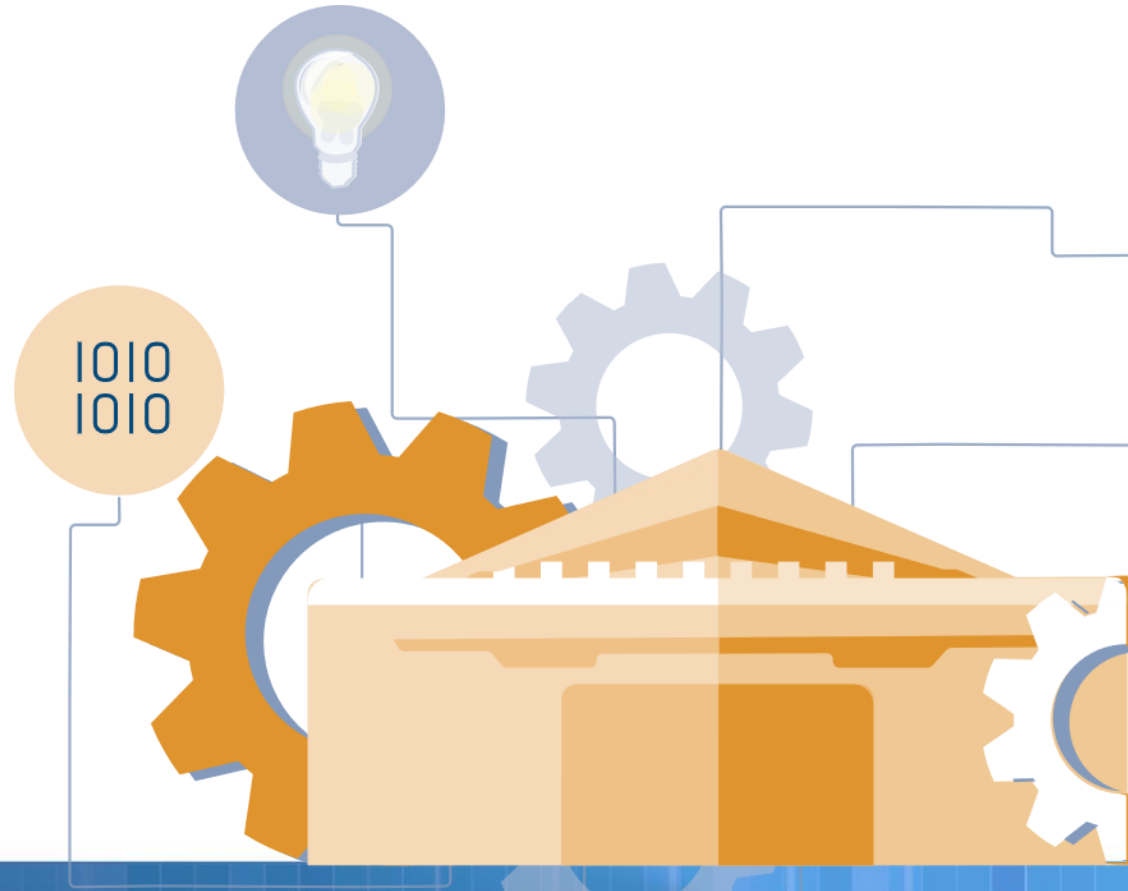
New Trends in MeSH terms

Are we ready for data-centric usage to leverage MeSH to gain NLM resources?

1. AI ready
2. Machine readable fields
3. Simplification of MeSH (e.g., Elbow Injury and Shoulder Injury)
4. Inclusion of natural language friendly entry terms (e.g., heart attack)
5. Continued interaction with regional translations of MeSH (e.g., PAHO)
6. Adoption of other formats (e.g., MeSH RDF)
7. Integration and harmonization of other databases into MEDLINE
8. Increase the coverage
9. Close the gap and MeSHfy



Q&A
Thank you



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