

MTI Recommendation Explanation for Cataloging User's Manual

The MTI Recommendation Explanation for Cataloging (MTI-REC) page was designed to provide Catalogers with the ability to select MTI recommendations for their cataloging efforts and also provide the details behind all of the recommendations MTI makes for a given citation. We also wanted to create an environment where the person using the MTI-REC would have access to all of the available resources they might need in evaluating the MTI recommendations.

In some cases, we have more detailed information to display than others because the MetaMap method provides a much richer set of details about where a recommendation came from and why MTI recommended the term than from the PubMed Related Citations method.

Highlights of the new MTI-REC web page include:

- All words and phrases in the citation that participated in the MTI recommendations are highlighted
- Access to MeSH Browser information on all MTI recommendations
- Access to all PubMed Related Citations for the citation
- Detailed information on why MTI recommended the terms that it did
- Information on when MTI processed the citation, and what version of MeSH was used,
- Ability to select any/all of the MTI recommendations and have them included in the Cataloging for a record.

For PubMed Related Citations, we are using the TexTool program to determine the list of nearest related articles for the given citation.

There are two distinct ways that someone can access a record containing information about the MTI recommendations for that record. The first method involves putting the PMID you would like in the "Search PMID" box on the homepage (see Figure 1). The second method is by using the lookup list of PMIDs to select the PMID of the record you wish to work on. This "PMID Lookup List" is accessed via the link in the first paragraph of the homepage and contains a list of all of the PMIDs in lowest to highest order for easier selection (see Figure 2). Both of these methods will bring you to the web page containing all of the information about the MTI recommendations for the PMID and allow you to start Cataloging that particular record.

Selecting the blue question mark  just below the "Search PMID" area will bring up a PDF copy of this manual.

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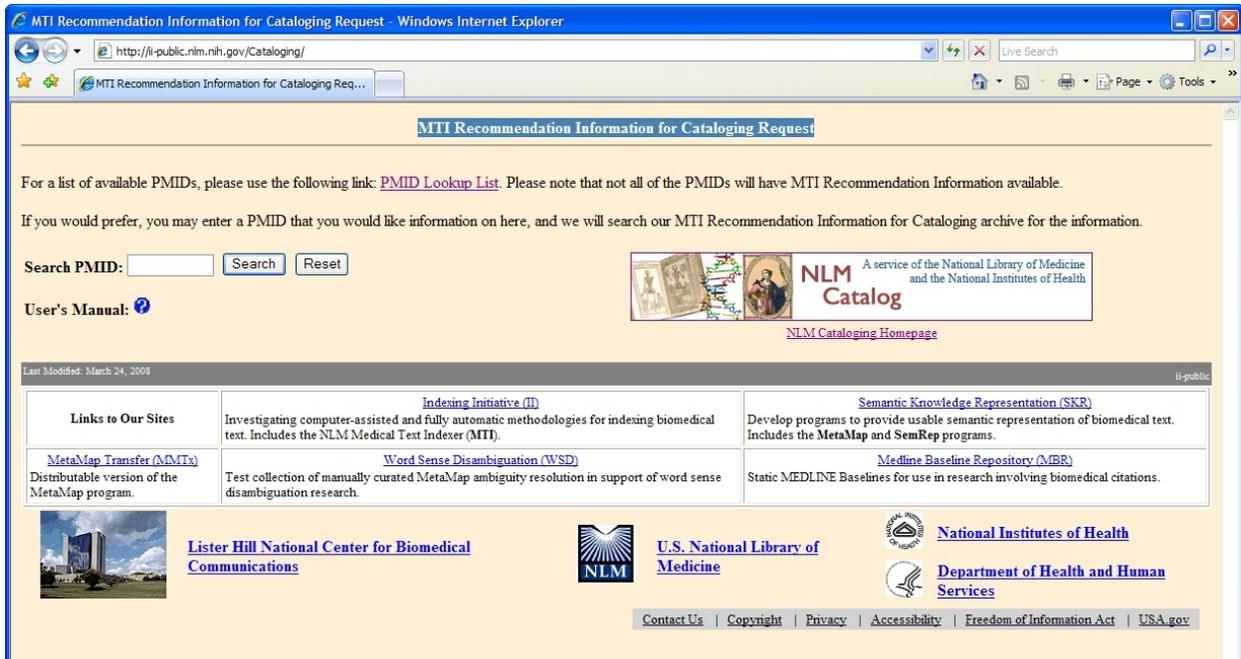


Figure 1 - MTI Recommendation Information for Cataloging Homepage

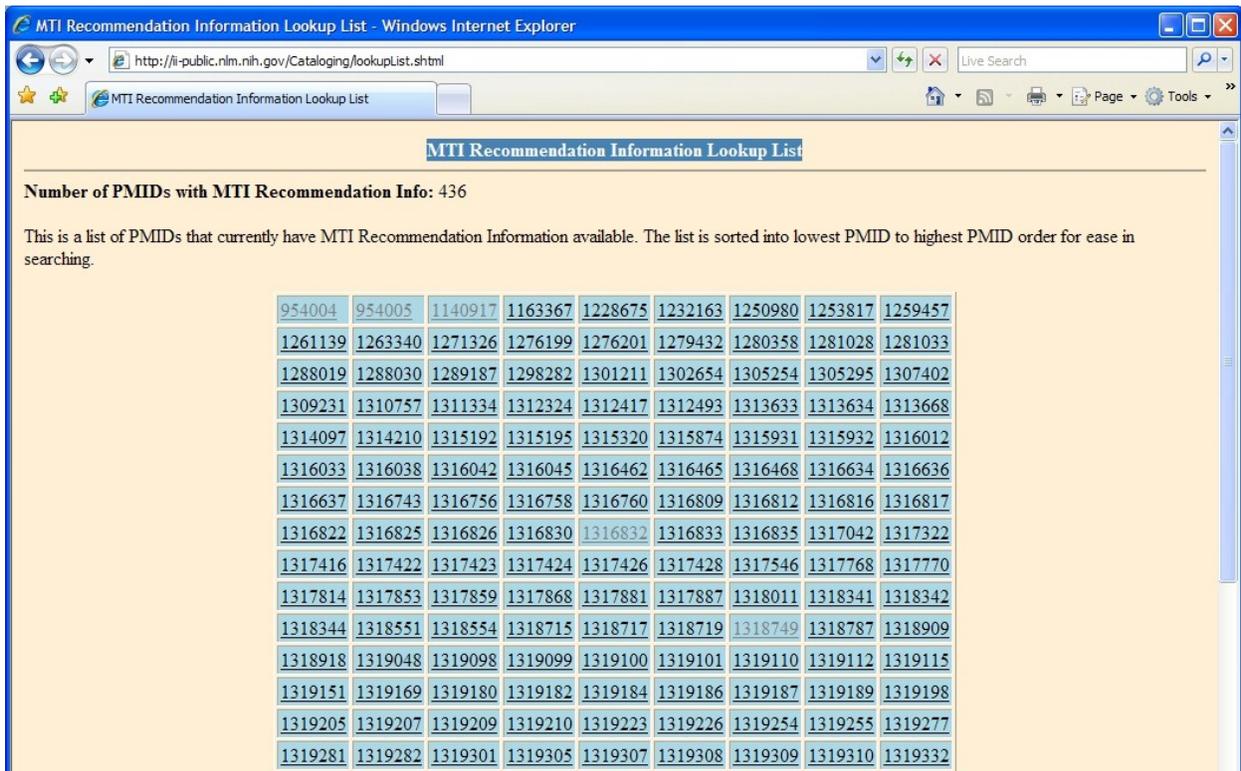


Figure 2: PMID Lookup List

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The following screen shot (Figure 3) shows what the MTI-REC looks like when it starts up. The top of the page details when the citation was processed by MTI, what version of MeSH was used, and what version of PubMed Related Citations (PRC) was used. Below this is the actual citation with all of the words and phrases involved in the MTI recommendations highlighted using a **brown coloring and underlining**. Below the citation, on the left-hand side is the Cataloging input area where MTI recommendations selected from the list on the right are added and the Cataloger can manually enter terms. On the right-hand side are all of the MTI recommendations with the **Geographical Terms** (if any) below the MeSH Headings in a tan color and denoted by “[GEO]” after the term. Then, below the Geographical terms (if any), **Publication Types** (if any) are displayed in an orange color and are denoted by “[PT]” after the term. Each term has a checkbox for easy selection and a green question mark  for access to the MeSH Browser for that term. At the bottom of the page is where the detailed explanation information will appear.

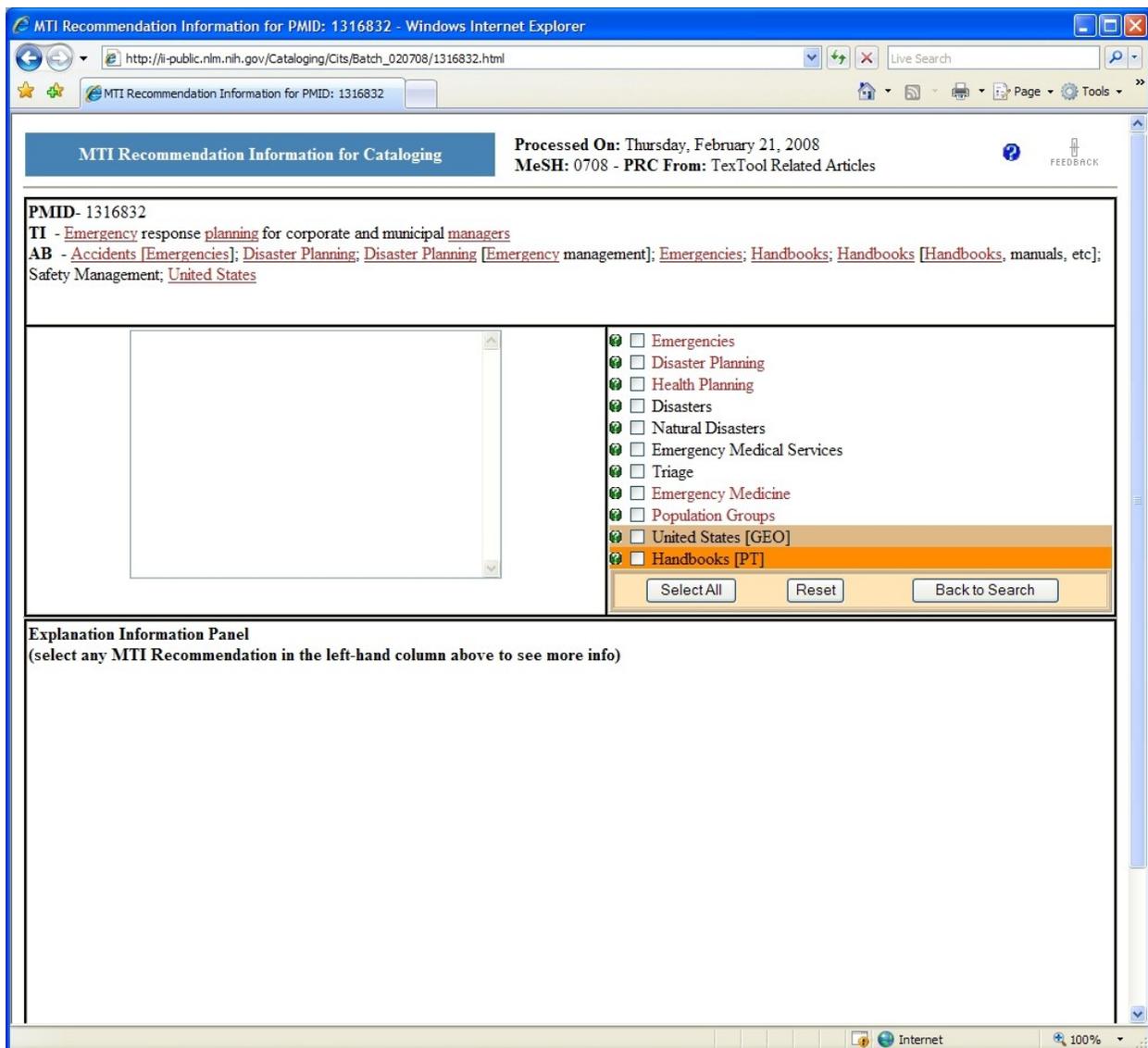


Figure 3: Initial MTI Recommendation Explanation Screen

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What can you do from the startup screen?

1. Selecting the blue question mark  from the top of the web page will open this document.
2. We have a main work area (see Figure 4) where Catalogers will be able to select MTI recommendations and manually add terms to the Cataloging for a record. The left-hand side is the Cataloging input area where MTI recommendations selected from the list on the right are added and the Cataloger can manually enter terms. The right-hand side contains the MTI recommendations in highest to lowest relevancy order. MeSH Terms are followed by any **Geographical Terms** and then any **Publication Types** for each record. Not all records will have Geographical Terms and/or Publication Types.

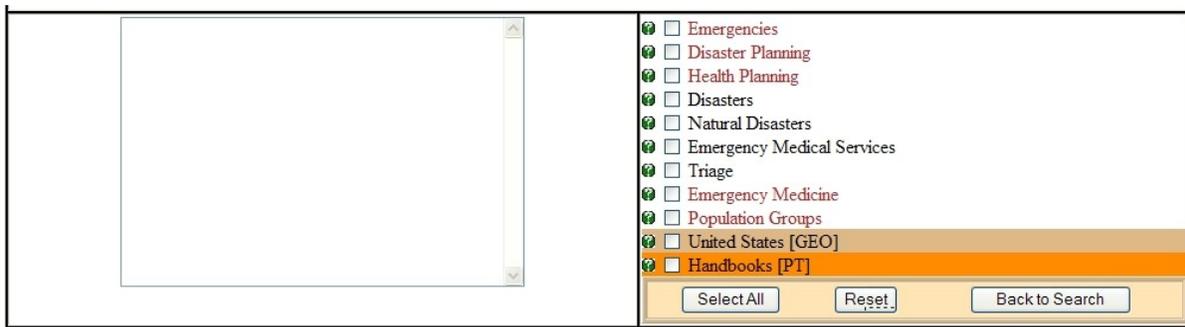


Figure 4: Main Work Area

Geographical Terms (if any) are displayed immediately below the MeSH Headings in a tan color and denoted by “[GEO]” after the term.

Publication Types (if any) are displayed in an orange color and are denoted by “[PT]” after the term.

Selecting the green question mark  next to each MTI recommendation brings up the MeSH Browser with that term loaded.

Catalogers can select each of the MTI recommendations individually by selecting the respective checkboxes to the left of each recommendation, or they can select the “Select All” button and all of the MTI recommendations will be checked – *except* the Publication Types. As each box is checked, the MTI recommendation will appear in the box in the left-hand side of the window. The “Reset” button will uncheck all of the boxes and clear out the box on left-side of the window. The “Back to Search” button will return the Cataloger to the main MTI Cataloging page where they can enter a PMID to search MTI recommendations for.

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- Rolling the mouse over any of the words in the citation that are highlighted by the brown color and underlining (e.g., highlighted text) will show what MTI recommendations were made using the word by displaying a bubble above the word with the MTI recommendations listed and also highlighting the appropriate MTI recommendations themselves in the right-hand panel below the citation (see Figure 5).

The screenshot shows a web browser window titled "MTI Recommendation Information for Cataloging". The address bar shows the URL: http://ii-public.nlm.nih.gov/Cataloging/Cits/Batch_020708/1316832.html. The page content includes:

- Page title: MTI Recommendation Information for Cataloging
- Processed On: Thursday, February 21, 2008
- MeSH: 0708 - PRC From: TextTool Related Articles
- PMID- 1316832
- TI - Emergency response planning for corporate and municipal managers
- AB - Accidents [Emergencies]; Disaster Planning; Disaster Planning [Emergency management]; Emergencies; Handbooks; Handbooks [Handbooks, manuals, etc]; Safety Management; United States

A mouse-over bubble above the word "planning" displays the text "see Health Planning".

On the right side, there is a list of MTI recommendations with checkboxes:

- Emergencies
- Disaster Planning
- Health Planning
- Disasters
- Natural Disasters
- Emergency Medical Services
- Triage
- Emergency Medicine
- Population Groups
- United States [GEO]
- Handbooks [PT]

Buttons at the bottom of the list: Select All, Reset, Back to Search.

Explanation Information Panel
(select any MTI Recommendation in the left-hand column above to see more info)

Figure 5: Text Word Mouse-Over Example

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4. Rolling the mouse over any of the MTI recommendations will highlight the MeSH term and also highlight all of the places in the text that caused this MeSH term to be recommended (see Figure 6).

The screenshot shows a web browser window titled "MTI Recommendation Information for PMID: 1316832 - Windows Internet Explorer". The address bar shows the URL: http://ii-public.nlm.nih.gov/Cataloging/Cits/Batch_020708/1316832.html. The page content includes:

- Page Title: MTI Recommendation Information for Cataloging
- Processed On: Thursday, February 21, 2008
- MeSH: 0708 - PRC From: TexTool Related Articles
- PMID- 1316832
- TI - [Emergency](#) response [planning](#) for corporate and municipal [managers](#)
- AB - [Accidents](#) [[Emergencies](#)]; [Disaster Planning](#); [Disaster Planning](#) [[Emergency](#) management]; [Emergencies](#); [Handbooks](#); [Handbooks](#) [[Handbooks](#), manuals, etc]; [Safety Management](#); [United States](#)

A list of MeSH terms is displayed with checkboxes:

- Emergencies
- Disaster Planning
- Health Planning
- Disasters
- Natural Disasters
- Emergency Medical Services
- Triage
- Emergency Medicine
- Population Groups
- United States [GEO]
- Handbooks [PT]

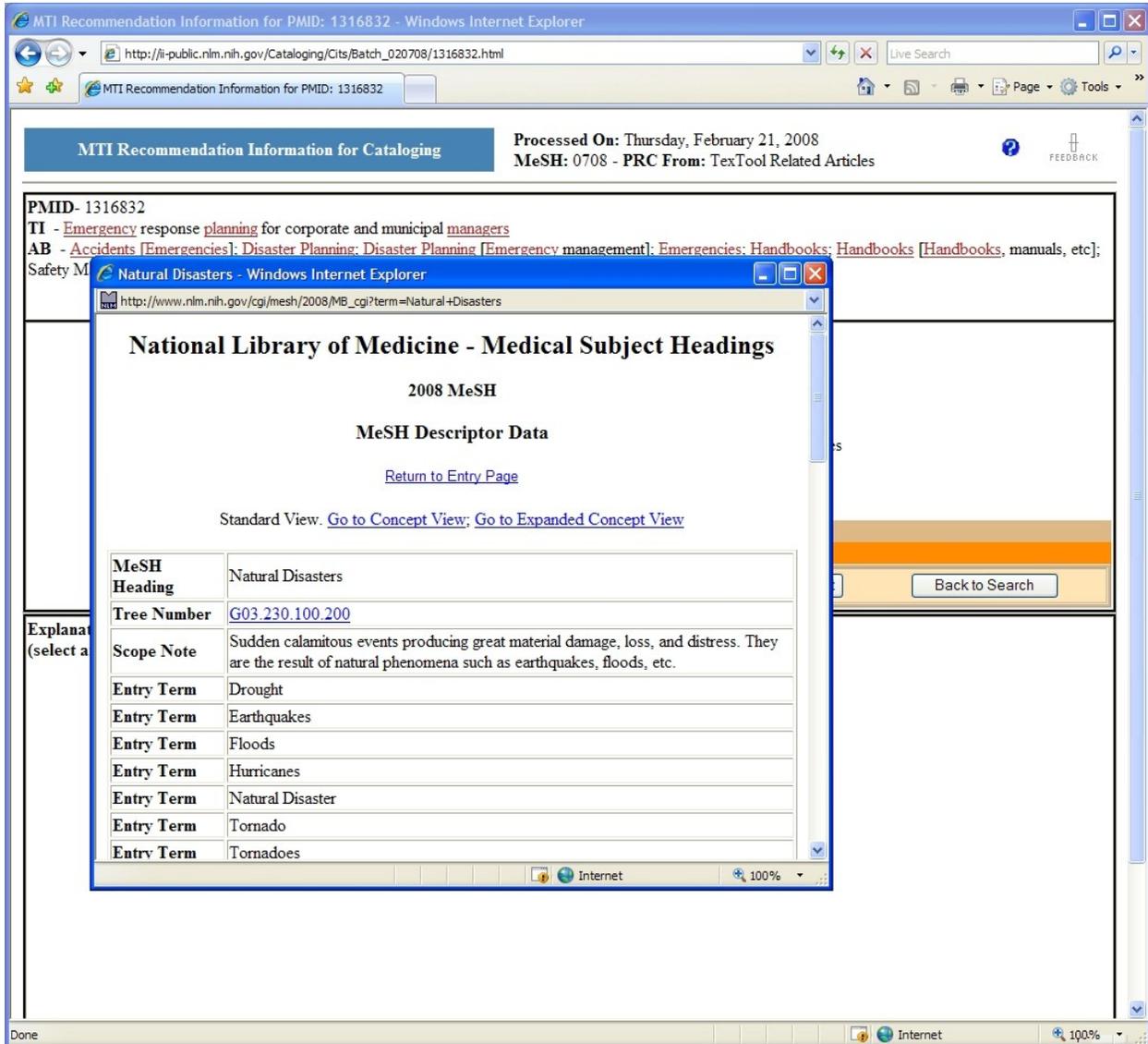
A tooltip "Select for details" is visible over the "Emergencies" term. Below the list are buttons for "Select All", "Reset", and "Back to Search".

Explanation Information Panel
(select any MTI Recommendation in the left-hand column above to see more info)

Figure 6: MTI Recommendation Mouse-Over Example

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5. Selecting the question mark  next to any of the MTI recommendations will popup a small window containing the MeSH Browser with the MeSH term that MTI recommended loaded. You can repeatedly do this and the same window will be used – just the information inside the window will change (see Figure 7).



The screenshot shows a Windows Internet Explorer browser window titled "MTI Recommendation Information for PMID: 1316832". The address bar shows the URL: http://ii-public.nlm.nih.gov/Cataloging/Cits/Batch_020708/1316832.html. The page content includes:

MTI Recommendation Information for Cataloging

Processed On: Thursday, February 21, 2008
MeSH: 0708 - PRC From: TexTool Related Articles

PMID- 1316832
TI - [Emergency](#) response [planning](#) for corporate and municipal [managers](#)
AB - [Accidents](#) [[Emergencies](#)]; [Disaster Planning](#); [Disaster Planning](#) [[Emergency management](#)]; [Emergencies](#); [Handbooks](#); [Handbooks](#) [[Handbooks](#), manuals, etc];
Safety M

A smaller browser window titled "Natural Disasters - Windows Internet Explorer" is overlaid on top. Its address bar shows: http://www.nlm.nih.gov/cgi/mesh/2008/MB_cgi?term=Natural+Disasters. The content of this window is:

National Library of Medicine - Medical Subject Headings

2008 MeSH

MeSH Descriptor Data

[Return to Entry Page](#)

Standard View. [Go to Concept View](#); [Go to Expanded Concept View](#)

MeSH Heading	Natural Disasters
Tree Number	G03.230.100.200
Scope Note	Sudden calamitous events producing great material damage, loss, and distress. They are the result of natural phenomena such as earthquakes, floods, etc.
Entry Term	Drought
Entry Term	Earthquakes
Entry Term	Floods
Entry Term	Hurricanes
Entry Term	Natural Disaster
Entry Term	Tornado
Entry Term	Tornadoes

At the bottom of the MeSH window, there is a "Back to Search" button.

Figure 7: MeSH Browser with "Natural Disasters" loaded

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6. Selecting any of the MTI recommendations will highlight all of the words/phrases in the body of the citation that participated in MTI making the recommendation and display all of the detailed background information for the MTI recommendation in the bottom "Explanation Information Panel" (see Figure 8). The next section of this document "MTI Detailed Background Information" describes what types of background information are available.

The screenshot shows a web browser window titled "MTI Recommendation Information for PMID: 1316832 - Windows Internet Explorer". The address bar shows the URL: http://ii-public.nlm.nih.gov/Cataloging/Cits/Batch_020708/1316832.html. The page content includes:

- Header: "MTI Recommendation Information for Cataloging" and "Processed On: Thursday, February 21, 2008 MeSH: 0708 - PRC From: TexTool Related Articles".
- PMID: 1316832
- TI - [Emergency](#) response [planning](#) for corporate and municipal [managers](#)
- AB - [Accidents](#) [[Emergencies](#)]; [Disaster Planning](#); [Disaster Planning](#) [[Emergency management](#)]; [Emergencies](#); [Handbooks](#); [Handbooks](#) [[Handbooks, manuals, etc.](#)]; [Safety Management](#); [United States](#)
- A list of MeSH terms with checkboxes: Emergencies, Disaster Planning, Health Planning, Disasters, Natural Disasters, Emergency Me, Triage, **Emergency Medicine**, Population Groups, United States [GEO], Handbooks [PT]. A tooltip "Select for details" is over the "Emergency Medicine" checkbox.
- Buttons: "Select All", "Reset", "Back to Search".
- Table with two columns: "Emergency Medicine" and "Found in 1 of top 10 PubMed Related Citations".

Emergency Medicine	Found in 1 of top 10 PubMed Related Citations
Type: MeSH Heading (MH) Recommended by: Both MetaMap and PubMed Related Citations Location: Found in Abstract Only	3965002 [PRC Rank: 2 Score: 17.06/100] Disaster training for emergency physicians in the United States: a systems approach. Ann Emerg Med. 1985 Jan;14(1):36-40.
MTI Triggering Information: The following word/phrase was used from the text: -- "Accidents [Emergencies]"	
Details: Text "Accidents [Emergencies]" --> MetaMap Mapped to: "Accident & emergency" --> Restrict to MeSH gave us: "Emergency Medicine"	

Figure 8: MTI Recommendation Selection

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MTI Detailed Background Information:

When you select any of the MTI recommendations you will see the detailed background information for the word. The left-hand side of the bottom panel (see Figure 9) contains all of the background information for why MTI recommended this particular term. The right-hand side of the bottom panel (see Figure 10) contains a list of the PubMed Related Citations that participated in this particular MTI recommendation.

The MTI recommendation background information (left-hand side) will contain:

- What type of MeSH term is this (MeSH Heading, CheckTag, MeSH Entry Term, Supplemental Concept, or a MeSH Heading Mapped To)
- Which methods recommended this term (MetaMap, PubMed Related Citations, or both)
- Where the text that triggered the recommendation was found (Title, Abstract, or both). Note that only the MetaMap method contains this information, so if a term is recommended only by PubMed Related Citations, we do not have any location information.
- MTI Triggering Information will then show all of the words or phrases from the text that contributed to MTI recommending this term.

Treatment Outcome
Type: MeSH Heading (MH)
Recommended by: Both MetaMap and PubMed Related Citations
Location: Found in Abstract Only
MTI Triggering Information: The following word/phrase was used from the text: -- "treatment outcome"
Details: Text "treatment outcome" --> MetaMap Mapped to: "Treatment outcome" --> Restrict to MeSH gave us: "Treatment Outcome"

Figure 9: Left-hand side - MTI Background Information

- If you are really interested in how MTI recommended a specific term, then the “Details” section will show the logic flow from identifying the text in the article, matching (mapping) the text to the corresponding UMLS Concept(s), converting the UMLS Concept into a MeSH term (Restrict to MeSH), and then in some cases, MTI provides the MeSH Entry Term instead of the MeSH term because the MeSH Entry Term was actually shown in the text.
- You may also see the term “Ambiguously MetaMap Mapped to:” in the Details section. This simply means that MetaMap found more than one UMLS concept that matched (mapped) to the text – when this occurs, it is known as ambiguity. For example, the text “cold” maps to three different UMLS concepts in the 2007 UMLS:
Cold (cold temperature) [Natural Phenomenon or Process],
Cold (Common Cold) [Disease or Syndrome], and
Cold (Cold Sensation) [Physiologic Function].

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PubMed Related Citations:

The right-hand side of the bottom panel (see Figure 10) contains a list of the PubMed Related Citations that participated in this particular MTI recommendation. This section contains all of the information pertaining to the PubMed Related Citations including:

- Number of related citations participating out of the top 10 we use for MTI (in this example, we have 5 of the top 10 participating).
- PMID of the related citation. NOTE: Selecting the PMID will popup a new window containing the Entrez/PubMed entry for the PMID in "Citation" view which shows the abstract information as well as the MeSH Indexing (see Figure 11).
- PRC Rank – This is the ranking order for the given related article ranging from 1 to 10 with 1 being the highest.
- Score – Score that this related article received out of 100 (36.58/100) is a score of 36.58.
- Title of the related article followed by the Journal reference information for the article.

Found in 5 of top 10 PubMed Related Citations	
15191617 [PRC Rank: 1 Score: 36.58/100]	Three year naturalistic outcome study of panic disorder patients treated with paroxetine. BMC Psychiatry. 2004 Jun 11;4:16.
12832239 [PRC Rank: 2 Score: 33.04/100]	Impact of antidepressant discontinuation after acute bipolar depression remission on rates of depressive relapse at 1-year follow-up. Am J Psychiatry. 2003 Jul;160(7):1252-62.
9721829 [PRC Rank: 5 Score: 32.52/100]	Cognitive-behavioral group therapy for panic disorder in the general clinical setting: a naturalistic study with 1-year follow-up. J Clin Psychiatry. 1998 Aug;59(8):437-42; quiz 443.
12466626 [PRC Rank: 8 Score: 21.15/100]	

Figure 10: Right-hand side - PubMed Related Citation References

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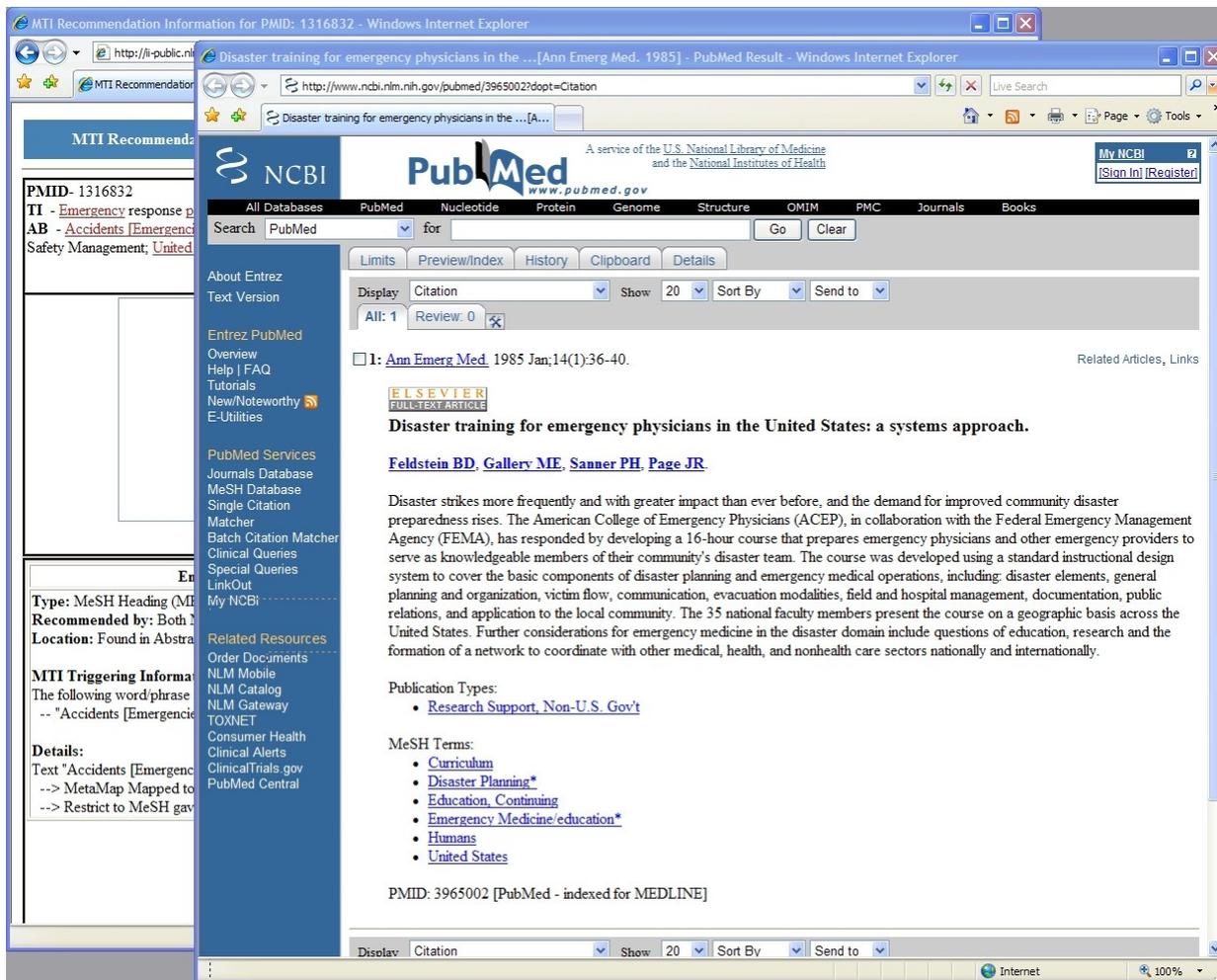


Figure 11: Entrez/PubMed in Citation View for PMID 3965002