Guidelines for Pain Annotations

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Annotation Guidelines - Pain

Annotation task

The documents are pre-annotated with mentions of pain and related terms. The task is to:
1. Validate if these mentions are relevant or not relevant, to the best of your knowledge
2. Label the annotations with the appropriate meta-annotations
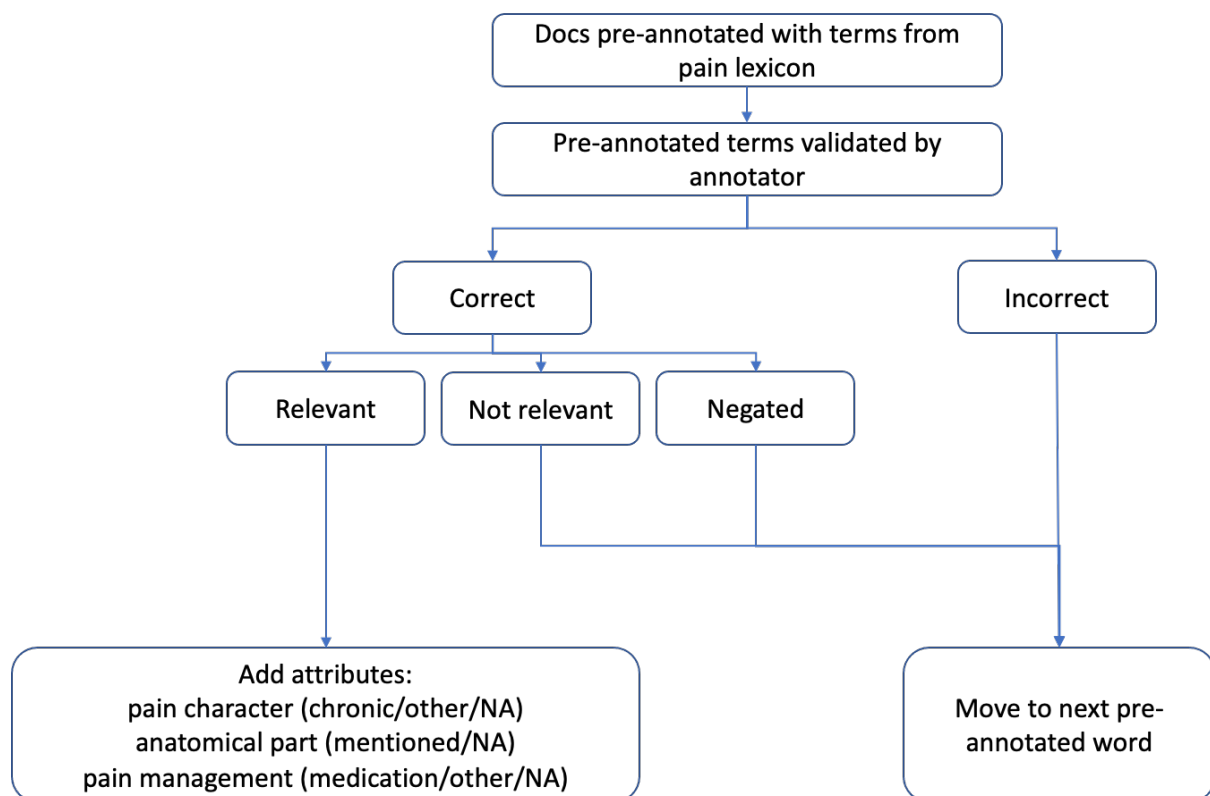   a. Relevant (yes/no/negated)
   If relevant:
   b. Pain character (chronic/other/NA)
   c. Anatomical part (mentioned/NA)
   d. Pain management (medication/other/NA)
   e. Self-harm/suicidality (yes/NA)

Annotation tool

MedCAT Annotation Tool will be used in the annotation process. Some instructions on how to use the interface can be found here.

Annotation steps

1. Upon logging into SLaM VPN, open a browser (preferably Google Chrome) and go to this address: xxxx
2. Choose the pain_annotation_task on the homepage.
3. The keywords within the text have been highlighted for ease of spotting them.
   For example:
   pain: she was in a lot of pain
   burn: he felt a burning sensation in his hands
   Algia: she had fibromyalgia
   Ache: he had constant headaches
4. The words will be linked to a SNOMED concept (seen on the top left corner of the MedCAT interface)
5. Flowchart of steps:

```
                    ┌─────────────────────────────┐
                    │  Docs pre-annotated with terms from  │
                    │         pain lexicon         │
                    └─────────────────────────────┘
                                  │
                    ┌─────────────────────────────┐
                    │  Pre-annotated terms validated by  │
                    │          annotator           │
                    └─────────────────────────────┘
                         │                    │
                ┌───────────────┐      ┌───────────────┐
                │    Correct    │      │   Incorrect   │
                └───────────────┘      └───────────────┘
             │         │         │             │
      ┌──────────┐ ┌──────────┐ ┌──────────┐
      │ Relevant │ │   Not    │ │ Negated  │
      │          │ │ relevant │ │          │
      └──────────┘ └──────────┘ └──────────┘
```

Add attributes:
pain character (chronic/other/NA)
anatomical part (mentioned/NA)
pain management (medication/other/NA)

Move to next pre-annotated word

Attributes

Header	Meaning	Example/ Expected output
correct	This indicates whether the keyword within the **annotated word and its immediate context** is correct or not. The mention will be marked as correct if it is about pain. Mentions that are not correct: - Mentions referring to inanimate objects such as "burning incense..", "burn marks on the door.." - If the text is a mixture of jumbled up letters and symbols making it illegible or nonsensical Mentions that are correct (but will be marked as not relevant in the next step): - Mentions referring to the patient but not explicitly to pain, such as "burns on her leg..", "burnt her arms..", "feeling burnt out" - Pain related to someone other than the patient, such as patient's mother	yes/no

	- Emotional and mental pain	
If the mention is marked as correct: yes:		
relevant	This indicates whether the keyword within the **annotated word** and its immediate context is relevant or not i.e. is it referring to pain in a medical sense and is it referring to the patient as a subject who is experiencing pain. Mentions that are not relevant include: - Metaphorical mentions of pain - referring to someone other than the patient - Any reference to mental pain - Example of metaphorical mentions: '..being a pain..', '..sticking out like a sore thumb..' - Hypothetical mentions of pain (since the patient is not experiencing pain in this instance) such as '...fear of pain in the future', 'worried about potential pain..'. This would also include inconclusive mentions of pain such as "?migraine" - Other nouns such as burn which don't explicitly mean the patient is in pain, such as ..'he has a burn on his hand', '...severe burns' - Emotional pain such as "..the pain inside her" - even if it is implied such as "he was in pain because his girlfriend left him…" - ...if pain persists (hypothetical) Mentions that are negated include: - Indicating absence of pain - Indicating no pain - Specifically using words such as no, not etc. within the annotated span - Examples of negated mentions: '...she was in no pain..', '..he does not complain of any headaches..'	yes/no/negated
If a mention is relevant - yes, do the following: (if not relevant or negated, move on to next annotation)		
Pain character	This refers to the quality of pain that might be mentioned in the **annotated word** and its **immediate context.** If it is clearly mentioned as chronic (the word "chronic" explicitly mentioned), then the option 'chronic' can be chosen.	chronic/other/NA (default is NA)

	If it refers to a synonym of chronic, such as "ongoing" etc - mark as "other" Any other quality - such as intermittent, burning, sharp, acute - can be marked as 'other' Aching pain, or painful ache – "other" Period pain, migraine pain - character "other" If there is an adjective before the pain term, mark as other. Examples: burning, stabbing, throbbing etc. If this is not clear, or no character mentioned, it can be marked as 'NA'.	
Anatomical part	Is there reference to a particular body part in relation to the pain and within the **annotated word and its immediate context**? If so, the option 'mentioned' can be chosen. Such as "headache", "lower back pain". If it is not clear, or nothing mentioned, this can be marked as 'NA'. "Pain on the left side" - mark as "mentioned". "Pain all over" or "pain all over the body" - mark as "mentioned". Period pain, migraine pain - anatomy "NA"	mentioned/NA (default is NA)
Pain management	Is the mention related to a method for pain management, for example medication, such as "pain killers", or mentions of drugs in relation to the pain, and is part of the **annotated word and its immediate context**? This can be marked as 'medication'. If other measures - such as physiotherapy or massage - are mentioned as part of the annotated word, these can be marked as 'other'. If it is not clear, or nothing about management is mentioned, this can be marked as 'NA'. Measures can be annotated even if the mention refers to a recommendation and it is unknown if the patient has done it yet or not. "Pain management team", "under the pain	medication/other/NA (default is NA)

	management team", "Known to the pain management team" - mark as "other".	
Self-harm/ suicidality	If there is a mention of self-harm/suicidality around the mention of pain, such as within the same sentence, this can be mentioned here. Use your judgement here to decide whether a mention qualifies as self-harm. For example, drinking might not be considered self-harm (more likely self-destructive), so this would be marked as 'NA' for self-harm/suicidality	yes/NA (default is NA)
Comments	This section is for annotators to add any comments about the annotation. In addition to this, this section can be used to mention any temporality (if it is clear), such as how recent the mention of pain is (whether it is current or a distant event in the past) and whether the pain is happening now when the person is being seen, or in the past (if so, then how far back, such as 3 years ago/months ago etc.)	Use own words to describe temporality + plus any other comments

General rules:

1. The attributes options will show up only if you choose a mention as relevant.
2. Some attributes have defaults i.e. the default will be marked unless you change it. For example, Self-harm/Suicidality has been set at default of NA.
3. There might be some false positives, such as 'attached' for the word "ache". These can be marked as incorrect. Other examples: ache - attached, detached, rachel; pain - painting, painted..
4. When the text is too cryptic (lots of special symbols) and hard to read, it can be marked as incorrect.
5. If in doubt about any of the attributes, mark as NA.
6. If you come across a mention in the text that is not pre-annotated, you can add it in yourself by selecting the word and right-clicking to "add concept".
7. If there are mentions that are obviously spelling mistakes, such as "paine killer" which clearly is meant to be "pain killer", you can manually add these in by selecting the word and right-clicking to "add concept" and then picking the correct term from the drop-down on the right.

Examples:

sentence	keyword	Correct	Relevant	Pain character	Anatomical part	Pain management	self-harm/suicide

He likes burning things	burn	no	NA	NA	NA	NA	NA
He burnt down his house	burn	no	NA	NA	NA	NA	NA
Burn marks on the door	burn	no	NA	NA	NA	NA	NA
Had burn marks on his leg	burn	yes	no	NA	NA	NA	NA
She painted a picture of the situation	pain	no	NA	NA	NA	NA	NA
She is in constant pain	pain	yes	yes	other	NA	NA	NA
He used to suffer from severe headaches	ache	yes	yes	other	mentioned	NA	NA
She has sharp hip pain which has been ongoing for years	pain	yes	yes	other	mentioned	NA	NA
He is not on any pain killers	pain	yes	negated	NA	NA	NA	NA
The medication prescribed for pain has been ineffective	pain	yes	yes	NA	NA	medication	NA
He has been taking aspirin 200mg for his headaches	ache	yes	yes	NA	mentioned	NA	NA
He attempted suicide by taking pain killers	pain	yes	yes	NA	NA	medication	yes
She has back pain due to injury.	pain	yes	yes	NA	mentioned	NA	NA
She is taking pain relief meds for this	pain	yes	yes	NA	NA	medication	NA
She is taking pain medication because of a pulled muscle	pain	yes	yes	NA	mentioned	medication	NA
It will cause me a lot of pain if i am unsuccessful in my attempt at suicide	pain	yes	no	NA	NA	NA	NA

It is painful to think about the past	pain	yes	No	NA	NA	NA	NA
He suffers from chronic headaches and migraines	ache	yes	Yes	chronic	mentioned	NA	NA
She suffers from arthritis of the knee	arthritis	yes	yes	NA	mentioned	NA	NA
He has had sciatica for 10 years now	sciatica	yes	yes	NA	NA	NA	NA
She complained of period pains	pain	yes	yes	other	NA	NA	NA

Glossary

Annotation: A note by means of a comment added to a meaningful word from the sentence. For example, to annotate mentions of diseases within a sentence: "The patient has no family history of epilepsy" {Epilepsy}. This denotes that the underlined word/disease is epilepsy.

Meta-annotation/attribute: A meta-annotation is an annotation that can be applied to another pre-existing annotation. A meta-annotation is usually used to provide further information of the context of the pre-existing annotation. For example: "The patient has a negative family history of epilepsy" {Epilepsy, Presence: Negative} This denotes that the annotation epilepsy is a negative mention.

Help

If any questions arise or if any problems are encountered during the annotation process, please contact:

xxxx

If you encounter any access issues or issue regarding hours of work, please contact:

xxxx

Pain terms included in pre-annotation

unique extraction terms
ache

achin*
achyness
dynia
*algesia
angina
antalgic
apin
algia
arthritis
pain
burn
claudication
colic*
cramp*
dolor
dysaesthesia
dysesthesia
dysmenorrhea
dyspareunia
dysuria
gardner-diamond syndrome
heaviness
hurt*
lumbago
migraine (added June 2022)
mittelschmerz
polyneuropath*
rheumati*
sciatic*
soarness
sore
spasm
tender*

thalamic syndrome

Adjudication Guidelines - Pain

Possible scenarios

Annotator 1	Annotator 2	Annotator 3	Meets guidelines requirements?	Final adjudicated annotation
x	x	x	Yes	x
x	x	x	No	Pick the one that meets guidelines
x	x	y	x meets guidelines	x
x	x	y	y meets guidelines	y
x	y	z		Pick the one that meets guidelines