

# Predicting Readmission following AMI

## March 15, 2018 Annotation Guidelines

### GENERAL ANNOTATION GUIDELINES

- Text within the document title may be marked.
- Don't mark instructions given in the note.
- Don't interpret clinical data to decide whether to mark a class. Use the author's assertions to make the decision.
- ★ Mark **only** text pertinent to the patient. The current NLP system can distinguish between patient vs non-patient
- You may look up terms found in the notes. Here is a good lookup site: <http://www.uptodate.com/contents/search>

### SPAN SELECTION GUIDELINES

- "Spans" refer to a contiguous set of tokens within a sentence, where "tokens" are words and other meaningful character combinations (e.g. units of measurement and acronyms)
  - A **discontinuous span** is a special case, consisting of a **set** of 2 or more spans of text relating to a given annotation, where members of this set are not contiguous.
    - ❖ A discontinuous span would be used for examples like: "Hx of headaches, insomnia, **depression**"
- Spans selected for annotation should be restricted to the smallest number of tokens needed to represent **BOTH** the **concept** and **the full context** needed for assigning **attribute values to that concept**, such as 'may be an indication of' or 'denies', 'rule out' the maximum being annotating the entire sentence.
- Contextual evidence for the concept or attributes should use sentence level interpretation, not section or note-level
- In general, a span is marked as belonging to a single class, except in cases noted in these guidelines

### ATTRIBUTE ASSIGNMENT GUIDELINES

- Each class has a set of attributes, also requiring determination.
- Keep in mind that you are looking for assertions by the author of the note. It is important that you distinguish your own inferences from those of the author,
  - Don't mark "uncertain" that you, the annotator, are uncertain whether the text meets the criteria or not
    - ❖ "Possible hypertension" is an example of uncertainty expressed by the author.

#### *Assertion Status (Attribute)*

For each class, be careful to note whether the author of the note is asserting it as being present or negated or some qualifying uncertainty is expressed.

"Positive" is the default value.

If the class of interest is affirmed, or expressed as present, select "**Positive**"

If the class of interest is negated, or expressed as being absent select "**Negative**"

If there is uncertainty expressed in relation to the class, select "**Uncertain**"

The Attribute *Assertion* applies to all classes where indicated

- positive Ex: "I believe", "Consistent with", "Most likely", "Compatible with", "Probable"
- negative Ex: "no", "denies", "not", "absent"
- uncertain Ex: "Cannot rule out x", "Suggestive of", "May be x", "Presumably", "If x, then y"

#### **TEMPORALITY**

- Since there are no temporal attributes in this annotation schema, concepts that are expressed as clinical **recommendations** or **plan of care** will need to be regarded as future; therefore [uncertain]
- Concepts that are expressed as present currently or in the past should be considered [positive]
- Concepts that are expressed as being absent currently or in the past should be considered [negative]

## CLASS ASSIGNMENT GUIDELINES

★ Mark **only** text pertinent to the patient. The current NLP system can distinguish between patient vs. non-patient

### \*\*\*\*\* Social Support \*\*\*\*\*

1) **Living Alone:** Mark text **explicitly** indicating that the patient lives alone, or indicators **explicitly** to the contrary (lives with daughter). In the latter case, be sure to assign the assertion status of **Negative**.

✓ attribute: **Assertion (Default: Positive)**

#### Example Expressions

Living alone Assertion: <b>Positive</b>	Pt does not live with anyone else Assertion: <b>Positive</b>	Lives with wife & children Assertion: <b>Negative</b>	Living with friends Assertion: <b>Negative</b>
Living in shelter Assertion: <b>Negative</b>	Nursing home resident Assertion: <b>Negative</b>	Lives with mother Assertion: <b>Negative</b>	lives at Halfway House Assertion: <b>Negative</b>

⊗ **Do Not Mark:** Text that **fails to explicitly** indicate whether there are other people in the patient's living situation, such as "Pt is homeless", should not be marked with this class.

⊙ **Please Note:** The text **MUST** contain a word such as 'lives', 'staying', 'resides' or synonymous word. Inferences from concepts concerning roles such as "housewife" **do not suffice** for conforming to this class.

2) **Instrumental Support:** Mark references to relatives, family (including foster or adopted family) or friends or community organizations or **non-healthcare** facilities from which patient receives instrumental social support, including the instrumental support represented by housing, food, financial assistance, or participation in discussion of the patient's clinical or life situation or engagement in patient health education activities.

➤ Text indicating the **presence** of support should be marked **Positive**

➤ Text indicating the **absence** of a support or marginal support should be marked **Negative**

✓ attribute: **Assertion (Default: Positive)**

#### Example Expressions

Ex-wife brings food by daily	Granddaughter drives him to medical appointments	Son pays for pt's medication
Family managing healthcare, medications appointments	Family has been participating in healthcare decisions	
family attending doctor's app't	Daughter in law managing pt's money	Neither friends nor family driving pt home Assertion: <b>Negative</b>
Receives help from operation stand down	home health services twice a week	Daily meals from Feeding America
Rent assistance from Toomsaba Lives	Meals on Wheels	Utilities paid thru county coverage
Pt declined emergency home assistance Assertion: <b>Negative</b>	Medication education from hospital volunteers	Pt moved in with son
He will return to hotel on discharge Assertion: <b>Negative</b>	Homeless shelter is the only place she can return to Assertion: <b>Negative</b>	Patient is homeless Assertion: <b>Negative</b>
He does not have regular meals, eats mostly at McDonald's Assertion: <b>Negative</b>	Patient on foot at discharge, returning to Washington St Bridge Assertion: <b>Negative</b>	

⊙ **Please Note:** If the context indicates that housing is provided by the supporting individual, group or facility, this annotation should **also** be marked as "Living Alone" with assertion set = [negative] in cases where patient lives with the supporting individual or group or in the supporting facility

⊙ **Please Note:** The instrumental support of housing requires evidence that housing is being provided **to** the patient; the relation of living with is not sufficient by itself. An example of evidenced housing support would be a patient moving in with a family member.

⊗ **Do not mark** text referring to support provided by healthcare workers.

⊗ **Do not mark** Health care facilities such as hospice, palliative care, nursing homes or assisted living facilities **should not** be considered as instrumental support

## \*\*\*\*\* Functional Status \*\*\*\*\*

- 3) **Impaired ADL/IADL:** Mark text indicating the **INABILITY** to perform activities of daily living or instrumental activities of daily living. The cause effecting the impairment (captured by the class “Medical Condition”) may or may not be mentioned. Using this class requires an explicit mention of an ADL, e.g.,

“due to dizziness, no longer able to [reach her wheelchair]”

These are the activities to consider: (you may consult a ADL/IADL checklist if you wish. Here is one:

<http://betterhealthwhileaging.net/what-are-adls-and-iadls/> )

### Activities of Daily Living

- feeding
- toileting
- dressing
- grooming
- continence
- bathing
- walking, ambulation, mobility
- transferring (e.g., as moving from bed to wheelchair)

➤ The default Assertion Status value is [positive]; you will not need negative values for this class

✓ attribute: **Assertion (Default: Positive)**

### Instrumental Activities of Daily Living

- managing finances
- handling transportation (driving or navigating public transit)
- shopping
- preparing meals
- ability to communicate (to understand and be understood)
- ~~managing medications~~ (use **Medication Compliance** class)
- housework and basic home maintenance

### Example Expressions

needs temporary home health to help with ADLs	unable to perform ADLs/IADLs	Requires assistance to ambulate
No longer able to prepare meals for herself	Requires assistance to bathe	Requires assistance to eat
Pt requires assistance to get out of bed	Unable to communicate	Cannot dress himself

⊙ **Please Note:** Any degree of needing assistance should be marked.

⊗ **Do Not Mark:** Physical function screening tests scales such as PROMIS, GAF or Karnofsky scores

- 4) **Medical Condition:** Mark text referring to a non-transient medical condition or symptom whose presence would, with high likelihood, **CAUSE** a patient to be unable to perform ADLs/IADLs **without assistance**.

➤ Text indicating the **presence** of a candidate medical condition should be marked **Positive**

➤ Text indicating the **absence** of a candidate medical condition should be marked **Negative**

✓ attribute: **Assertion (Default: Positive)**

### Example Expressions

No evidence of dysphasia	unable to swallow	Patient is comatose
Assertion: <b>Negative</b>	Assertion: <b>Positive</b>	Assertion: <b>Positive</b>

⊙ **Please Note:** Indications for the assertion value, such as negation should be included in the selected span

- 5) **Medication Compliance:** Mark text indicating patient non-compliance to medical prescription. This includes both willful and inadvertent non-compliance by the patient. The text selected **MUST** refer to a medication.

### Example Expressions

He refuses to take his night meds	Pt forgets to take her digoxin	Reported he quit taking water pills
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⊙ **Please Note:** Instances that indicate the patient is having trouble with the IADL of medication management should be marked with this class rather than the class **Impaired ADL/IADL**

⊗ **Do Not Mark:** indications that the patient is in compliance. Assertion Status is **not available** for this class; otherwise every instance of medication would need to be captured, thus creating unhelpful noise for the NLP tool.

⊗ **Do Not Mark:** references to immunization, or decisions by healthcare providers to discontinue a medication

- 6) **Depression:** Mark text referring to a **diagnosis** of depression. This includes a diagnosis of bi-polar disorder, since that condition encompasses depression. Symptoms of depression should not, however, be marked.

➤ Text indicating the **presence** of depression should be marked **Positive**

➤ Text indicating the **absence** of depression should be marked **Negative**

✓ attribute: **Assertion (Default: Positive)**

### Example Expressions

Depression	Pt has Hx of depression	chronically depressed	manic-depressive	bi-polar	dysthymia
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⊗ **Do Not Mark:** Symptoms of depression, nor any condition other than Depression. **Not** Alcohol/drug/substance abuse; **Not** Personality disorder; **Not** Alzheimer's; **Not** Dementia

⊙ **Please Note:** Indications for the assertion value, such as negation should be included in the selected span

7) **Dementia:** Mark text referring to dementia, or indications of long-term cognitive impairment strongly implicating dementia

- Text indicating the presence of dementia should be marked **Positive**
- Text indicating the absence of dementia should be marked **Negative**
  - ✓ *attribute:* **Assertion (Default: Positive)**

**Example Expressions**

Dementia	He has history of demented behaviors	Although pt. shows signs of memory loss, she is not demented
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- ☉ **Please Note:** Indications for the assertion value, such as negation should be included in the selected span

8) **Language Barrier:** Mark text that indicating that the patient has a problem understanding educational and/or medical instructions about care due to language difference. For situations that mention the patient's language being other than English, assume that there is uncertainty about the patient's ability to comprehend discussion and medical instruction.

- Text indicating the presence of a language barrier should be marked **Positive**
- Text indicating the absence of a language barrier should be marked **Negative**
  - ✓ *attribute:* **Assertion (Default: Positive)**

**Example Expressions**

Needs interpreter	Does not understand English	Clearly understands discharge instructions
Assertion: <b>Positive</b>	Assertion: <b>Positive</b>	Assertion: <b>Negative</b>

- ☉ **Please Note:** Indications for the assertion value, such as negation should be included in the selected span

- ⊗ **Do Not Mark:** Remarks about English to English communication or communication dysfunction