Earache

CASE STUDY:

This 2-year-old female suffered from chronic sinus and ear infections for the previous year. Her mother described her as having an ear infection every other month, each time requiring 2-3 courses of antibiotics. She also presented with a chronic, green sinus discharge that never went away. Most of the time, her nose was completely blocked.

During her initial evaluation, an upper neck injury was discovered. Her mother recalled that during her daughter's birth, vacuum suction was used to extract her and it fracture her collar bone. Her mother surmised this must have also caused her child's neck injury. After care was administered, her nose drained until all of the green discharge was absent and no additional sinus or ear infections occurred. (http://www.erinelster.com/CaseStudies.aspx?ConditionID=6)

Background Information:

* Earache is a pain in the ear.
* Pain in the ear can be caused by all of the following:
  + Infection: usually patient presents with discharge from ear.
  + Water in the ear
  + Physical Trauma (blow to the ear)
  + Cold air
  + Impacted earwax
* Initial diagnosis: Aspirin/Acetaminophen, hot showers in an unventilated bathroom, or add over the counter drops in ear.
* Persistent earache, seek medical attention immediately.
* Over the counter eardrops: Auro, Debrox
* Pharmacy Prescription: Auralgan

NARSESE Translation

<(\*, {John-Doe}, 2) --> age>.

<{John-Doe} --> [earache]>.

<{John-Doe} --> [green-sinus-discharge]>.

<#x --> [ear-infection] > ==> <#x --> [earache] >.

<(\*, [ear-infection], [earache]) --> causation>.

<#x --> [earache]> ==> <#x --> [water-in-ear]>.

<(\*, [water-in-ear], [earache]) --> causation>.

<#x --> [earache]> ==> <#x --> [physical-trauma]>.

<(\*, [physical-trauma], [earache]) --> causation>.

<#x --> [earache]> ==> <#x --> [cold-air]>.

<(\*, [cold-air], [earache]) --> causation>.

<#x --> [earache]> ==> <#x --> [impacted-earwax]>.

<(\*, [impacted-earwax], [earache]) --> causation>.

<<#x --> Initial-treatment> ==> (--,<#x --> doctor-treatment>)>.

< Initial-treatment --> treatment>.

<<#x --> [ear-infection]> ==> <(\*, aspirin, {#x}) --> Initial-diagnosis>>.

<<#x --> [ear-infection]> ==> <(\*, acetaminophen, {#x}) --> Initial-diagnosis>>.

<<#x --> [ear-infection]> ==> <(\*, hot-showers, {#x}) --> Initial-diagnosis>>.

<<#x --> [ear-infection]> ==> <(\*, ear-drops, {#x}) --> Initial-diagnosis>>.

< [OTC] <-> [over-the-counter]>.

<<#x --> [ear-infection]> ==> <(\*, Auro-ear-drops, {#x}) --> OTC>>.

<<#x --> [ear-infection]> ==> <(\*, Debrox-ear-drops, {#x}) --> OTC>>.

< [Rx] <-> [pharmacy-prescription]>.

<<#x --> [ear-infection]> ==> <(\*, Auralgan, {#x}) --> Rx>>.

Step-by-step

INPUT:

<{John-Doe} --> [earache]>.

<#x --> [earache] > ==> <#x --> [ear-infection] >.

< Initial-treatment --> treatment>.

<<#x --> [earache]> ==> <(\*, aspirin, {#x}) --> Initial-diagnosis>>.

<<#x --> [earache]> ==> <(\*, acetaminophen, {#x}) --> Initial-diagnosis>>.

<<#x --> [earache]> ==> <(\*, hot-showers, {#x}) --> Initial-diagnosis>>.

<<#x --> [earache]> ==> <(\*, ear-drops, {#x}) --> Initial-diagnosis>>.

< [OTC] <-> [over-the-counter]>.

<<#x --> [earache]> ==> <(\*, Auro-ear-drops, {#x}) --> OTC>>.

<<#x --> [earache]> ==> <(\*, Debrox-ear-drops, {#x}) --> OTC>>.

< [Rx] <-> [pharmacy-prescription]>.

<<#x --> [earache]> ==> <(\*, Auralgan, {#x}) --> Rx>>.

OUTPUT:

OUT: <(\*,Auralgan,{{John-Doe}}) --> Rx>. %1.00;0.81%

(1)

IN: <{John-Doe} --> [earache]>.

IN: <#x --> [earache] > ==> <#x --> [ear-infection] >.

OUT: <{John-Doe} --> [ear-infection]>.

(2)

IN: <{John-Doe} --> [ear-infection]>.

IN: <<#x --> [earache]> ==> <(\*, aspirin, {#x}) --> Initial-diagnosis>>.

IN: <<#x --> [earache]> ==> <(\*, acetaminophen, {#x}) --> Initial-diagnosis>>.

IN: <<#x --> [earache]> ==> <(\*, hot-showers, {#x}) --> Initial-diagnosis>>.

IN: <<#x --> [earache]> ==> <(\*, ear-drops, {#x}) --> Initial-diagnosis>>.

OUT: <<(\*,aspirin,{#1}) --> Initial-diagnosis> ==> (&&,<(\*,acetaminophen,{#1}) --> Initial-diagnosis>,<(\*,ear-drops,{#1}) --> Initial-diagnosis>,<(\*,hot-showers,{#1}) --> Initial-diagnosis>)>. %1.00;0.40%

(3)

IN: <<(\*,aspirin,{#1}) --> Initial-diagnosis> ==> (&&,<(\*,acetaminophen,{#1}) --> Initial-diagnosis>,<(\*,ear-drops,{#1}) --> Initial-diagnosis>,<(\*,hot-showers,{#1}) --> Initial-diagnosis>)>. %1.00;0.40%

IN: < [OTC] <-> [over-the-counter]>.

IN: <<#x --> [earache]> ==> <(\*, Auro-ear-drops, {#x}) --> OTC>>.

IN: <<#x --> [earache]> ==> <(\*, Debrox-ear-drops, {#x}) --> OTC>>.

OUT: <<(\*,Auro-ear-drops,{John-Doe}) --> OTC> <=> <(\*,Debrox-ear-drops,{John-Doe}) --> OTC>>. %1.00;0.45%

(4)

IN: <<(\*,Auro-ear-drops,{John-Doe}) --> OTC> <=> <(\*,Debrox-ear-drops,{John-Doe}) --> OTC>>. %1.00;0.45%

IN: < [Rx] <-> [pharmacy-prescription]>.

IN: <<#x --> [earache]> ==> <(\*, Auralgan, {#x}) --> Rx>>.

OUT: <(\*,Auralgan,{{John-Doe}}) --> Rx>. %1.00;0.81%