

Analyzing Medical Results: Lexicon Exercise

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Introduction to Medical Informatics

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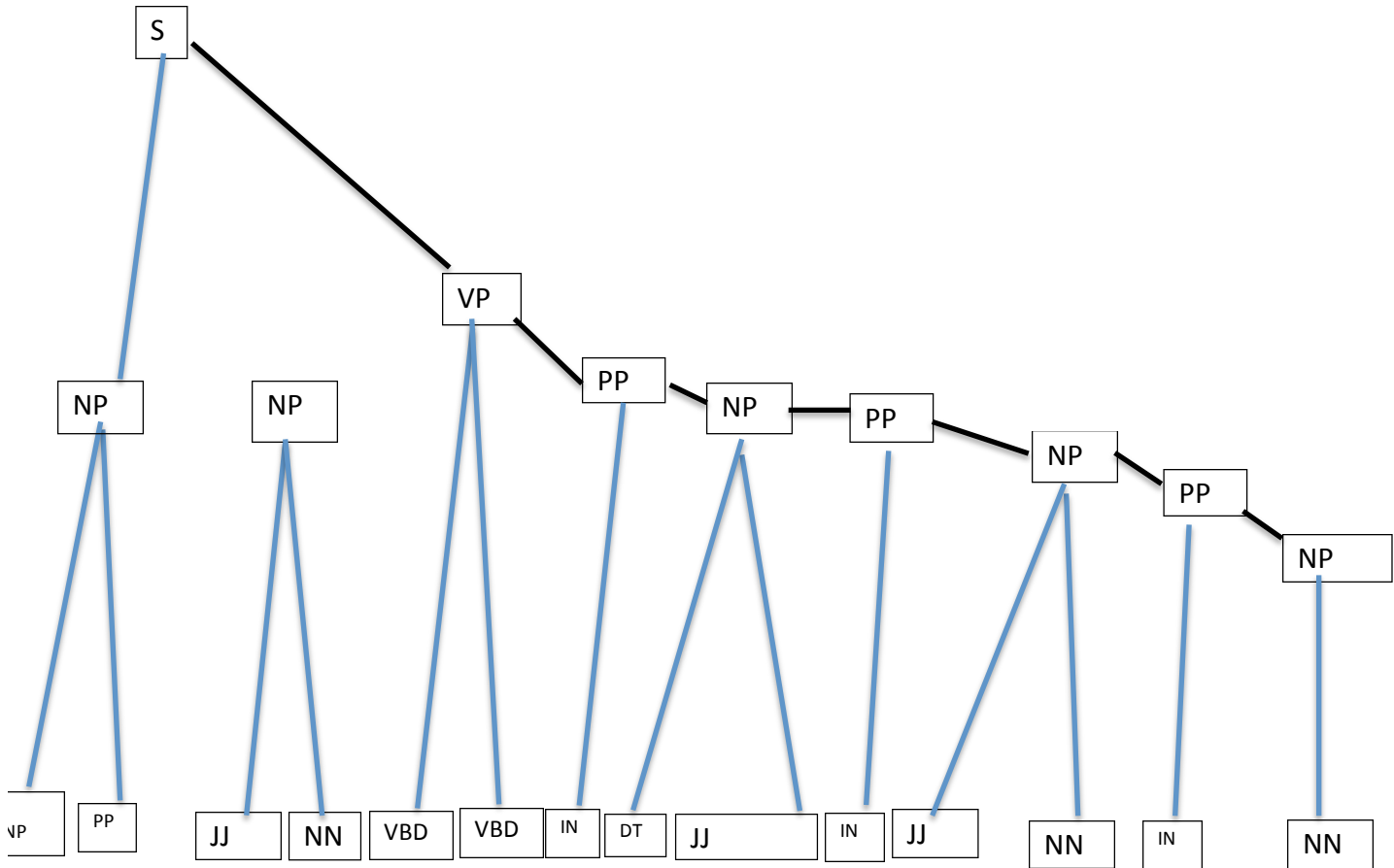
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Word	Tag	Meaning	Word	Tag	Meaning
Postoperative	JJ	Adjective			
Cardiac	NN	Singular noun			
Transplant	VB	Infinite verb			
Abnormal	JJ	Adjective			
Hemodynamics	NN	Singular noun	Hemodynamic	JJ	Adjective
Pericardial	JJ	Adjective			
Effusion	NN	Singular noun			
Successful	JJ	Adjective			
Pericardiocentesis	NN	Singular noun			
1000 cc	NNS	Plural noun			
Serosanguinous	JJ	Adjective			
Fluid	NN	Singular noun			
Were	VBD	Past-tensed verb			
Drained	VBD	Past-tensed verb			
From	IN	Preposition			
The	DT	Article			
Pericardial	JJ	Adjective	Pericardial sac	NN	Singular noun
Sac	NN	Singular noun			
With	IN	Preposition			
Significant	JJ	Adjective			
Improvement	NN	Singular noun			
In	IN	Preposition			
Hemodynamics	NN	Singular noun			

Parse Tree



1000cc of serosanguinous fluid were drained from the pericardial sac with significant improvement in hemodynamics

1000cc of	NP	Noun Phrase
Serosanguinous fluid	NP	Noun Phrase
Were drained	VP	Verb Phrase
IN	PP	Preposition
The pericardial sac	NP	Noun Phrase
IN	PP	Preposition
Significant improvement	NP	Noun Phrase
IN	PP	Preposition
Hemodynamics	NP	Noun phrase

There are many advantages of using a standard vocabulary such as SNOMED (Systematized Nomenclature of Medicine) within the electronic health record. One of the main advantages is the interoperability between health records. This would allow records to be viewed and understood among many different health care venues. The ability to integrate systems with standard language decreases the cost of development of the EMR. Standardizing of the data reduces the duplication of data in different locations. There is greater ability to utilize data and to extract meaningful data for research. SNOMED in particular is compatible with and maps with ICD-9, ICD-10, HL7, and DICOM .

A few disadvantages come with a standardized data system, mainly being the time factor. Until one is proficient at the system, capturing all the information one wants may be very time-consuming. The hand-written note may be quicker and often captures the essence from the writer. There are not always standardized terms or some of these nonmedical terms leading to lost data.

Standard language is a step towards greater integration of the EMR, yet there are some serious issues to consider particularly the standardization of different types of reports. Depending on the format of a report, it may be exceedingly difficult to incorporate into the EMR. Many reports contain tables with several different configurations this is very difficult for the computer to integrate. "The structured fields are easy for a human to interpret but are problematic for a general NLP program, because white spaced and indentation rather than linguistic structures determine the format of the table." (Friedman & Johnson, 2006, p. 331)

References

- Friedman, C., & Johnson, S. B. (2006). Natural Language and Text Processing in Biomedicine. In E. H. Shortliffe, & J. J. Cimino (Eds.), *Biomedical Informatics Computer Applications in Health Care and Biomedicine* (Third ed., p. 331). New York, New York: Springer Science + Business Media LLC.