



201955 AI based health signals discovery engine

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Summary

The ability to tag healthcare narratives into computable data promises dramatic improvements in population health. The CSN employs AI, NLP and ML to extract insights from text, supported by integrated SNOMED CT, deep patient history and genomics. CSN's smart 360 view delivers actionable intelligence positively impacting population health outcome.

Audience

Clinical, Policy/administration, Implementers

Learning Objectives

1. To understand how clinical narratives can be tagged to convert them into computable data points using Natural Language Processing, Machine Learning and Artificial Intelligence.
2. To learn about the challenges faced in streamlining such a complex solution with high fidelity and appropriateness.
3. To appreciate how AI based automation can help in extracting actionable intelligence from unstructured data.

Abstract

Clinical Semantic Network (CSN) is the result of years of development based on the input and clinical expertise of a team of clinicians and client users. CSN represents a unique approach to vastly increase the volume of computable clinical information. At its core, the CSN is a semantically built taxonomy and ontology—allowing monumental strides towards large scale clinical analytics—potentially revolutionizing healthcare.

In this presentation, we will discuss how we are leveraging this platform in two areas: firstly, 'structured clinical concepts' created during the interaction with a patient, including EMR/EHR and Patient/Consumer Engagement, and secondly, 'extraction through interrogation' by leveraging the same content infrastructure



to derive meaningful, computable data from narrative text—both retrospectively and in near-real time—by Virtual CSN or vCSN. We have used Natural language Processing to model this network and then used machine learning to train these highly complex models. A case study will be presented to demonstrate how this platform can help build solutions combining genomics, predictive analytics and deep patient history analysis to deliver better patient outcome.

Finally, the CSN represents an innovative leap forward in medicine since it provides a platform that readily disseminates usable medication information, data and clinical concepts—medical information that typically must be gleaned from unstructured text in other systems—to help build a smart 360 view of patients positively impacting population health outcome.

Reference Documentation

1. What is Clinical Semantic Network? <https://www.goldblattsystems.com/>
2. Unambiguous Semantic Clinical Data for Information Exchange and Enhanced Understanding <https://www.goldblattsystems.com/technology/our-solutions/>